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RICHARD P. ROTHWELL, C. E., M. E., } Editors.
ROSSITER W. RAYMOND, Ph. D., }

NOTE.—Communications relative to the editorial management should be addressed to Mr. ROTHWELL, P. O. Box 4404, New York. Articles written by Mr. RAYMOND will be signed thus *

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THE MINIATURE EDITION OF THE ENGINEERING AND MINING JOURNAL.

We are pleased to have to announce that the amount of engraving to fill the orders required for this beautiful edition of the JOURNAL is so great that it has been found impossible to complete it by the date originally intended, and it will now be made a "holiday" number, to appear on the 21st of December.

This marked appreciation of our efforts to secure wider and better markets for American products, and to make known the resources and advantages this country presents, is very gratifying, and shows that our business men are moving forward with intelligence and the spirit to develop all the resources that are within their reach. The business of the country is improving, and energetic and far-seeing men are preparing to float in on the rising tide.

THE VALUE OF SILVER CLIFF MINES.

The Silver Cliff (Colorado) mines promise to be a great bonanza; but as yet the curious deposit has been explored but very little, and the value of the mines is prospective rather than actual. The richest mines yet found in this district are the Silver Cliff and the Racine Boy. These were recently bonded for thirty days at $135,000; but, after examination, the parties declined to take them. It is true this is a very negative kind of valuation, but the fact is worthy of record nevertheless.

THE SUTRO TUNNEL.

It is with satisfaction we devote so large a space as we do this week to a description of the Sutro Tunnel and the difficulties which its enterprising and indomitable projector met with and overcame in carrying it through to completion; for this is beyond all question the most important mining enterprise that has ever been executed in this country. The natural difficulties in such a work are enormous under the most favorable circumstances; but those which Mr. SUTRO had to contend with from the opposition of the "rings" and cliques which have made Comstock mine management a very by-word and shame to all honest men, were greater far than those opposed by nature. Mr. SUTRO'S story, supported by unimpeached evidence, reads like the accumulated trials of some hero of romance. It is no exaggeration to say that there are very few, indeed, who combine the ability and the untiring perseverance which characterize this remarkable man, and to which we are certainly indebted for this grand enterprise.

The commercial value of the tunnel must be measured by an array of figures that becomes perfectly bewildering when we consider the hundreds of millions of dollars of low-grade ores that it makes available; the enormous saving it will effect in the drainage and working of the mines, both below and above the tunnel level, and the possibility which it offers for following this wonderfully rich vein to depths which, without it, are quite unattainable. No one should grudge the projector of this enterprise, or the stockholders of his company, the magnificent reward that seems to be in store for them, for their work has created more millions than the most exacting could desire.

THE ELECTRIC LIGHT AND HEATING GAS.

While the successful and economical employment of the electric current for general illumination would justly take high rank as an improvement, it seems to meet warmer encouragement than has heretofore been accorded to great improvements in other fields of usefulness. The history of important inventions has taught inventors to anticipate a struggle for recognition and to look for practical encouragement only after long-continued effort and patient waiting. Electric lighting presents an exception to the rule, for it receives ample public sympathy with no lack of material aid for its development. Whether this is due to a suddenly developed progressive spirit, heralding the near approach of the millennium, or to a lively hope that the new system of lighting may avenge the fancied or real wrongs of the gas consumer, is a question not difficult to answer when we observe with what evident satisfaction the depreciation in gas stocks is noticed by all except those interested therein.

There is no denying the statement that until quite recently the coal-gas companies have had it pretty much their own way. To be sure, the persistent and plucky water-gas men have made some bold and successful attacks upon the monopoly, and in some important cities have forced down the price of gas to a figure which would have prevailed generally but for the stubborn blindness of the managers of the old system; but this does not mollify the general public, which says, "We will have done with gas, and take its better, cheaper, and healthier rival."

The supplanting of an industry of so vast an extent as the manufacture of illuminating gas by one radically different in method and apparatus would be an anomaly almost without a parallel. We do not look for the speedy *wiping out* of the industry by any means, but we do anticipate a marked decrease in the use of gas for illuminating purposes.

But what is the attitude of the gas managers? Simply this: they whistle to sustain their courage, seek assurance in the notion that since the electric light never has succeeded it never will succeed, and blandly quote the remark made to old Noah by those other antediluvians left out in the wet: "It won't be much of a shower, after all."

Let them at once prepare for the manufacture and distribution of non-luminous gas for the heating of houses and cooking of food. This is the coming great improvement in the economy and comfort of domestic life. It will afford an employment for gas-works far beyond their present use, and now is the time for its introduction.

PERSONALS.

Gambling is not "legitimate business," even in mining stocks.

A mine to which stockholders or their representatives are refused admittance at proper hours is a good one to let alone.

There are far larger profits in good mines than in any other class of investments. No prudent man need run any risk in the matter.

Two and three per cent a month is a common dividend from mines which are honestly managed, and there are many such that have ore in sight to continue this for years.

When the directors of a company are found gambling in their own stocks, selling "short" or "long," as the case may be, it is time for honest and prudent men to sell out and stay out.

The Allentown Iron Company lays its failure to the anthracite coal combination's high prices for fuel; but the combination people say it was the low price of iron did it.

Every body thought that Messrs. LOUNSBERY & HAGIN had a pretty good "home-stake" in the Ontario; but now they have another mine that they call "Home-Stake" No. 1—probably because they consider it so much better than Ontario, that has up to this time been the best mine on the New York market, that it deserves the title of "Home-Stake" *par excellence*. Most men are fortunate nowadays when they have a "grub-stake."

If the directors and officers of one of our great city banks should vote themselves enormous salaries; make the bank pay them large commissions on all its business; sell to the bank at large prices in cash all the worthless or depreciated property or doubtful paper they owned as individuals, and transferred to themselves as individuals, without compensation, all the most profitable departments of the bank's business: and if, as the time for a new election drew near, these directors should lock up the most of the bank's funds in one of the vaults, and not only refuse to allow any one to examine that, to ascertain how much it contained, but if they should declare that the bank had no funds, was in debt, and on the verge of bankruptcy, and intimate the probability of the stockholders being called on for an assessment to enable it to continue its business: and if, when these statements and insinuations had produced a panic and heavy decline in the stock, these directors

should buy this up and reëlect themselves, then open the vault, show that the funds were not all gone, circulate reports that the bank was better off than ever, declare large dividends till the price of the stock had greatly advanced, and the funds had been nearly exhausted, when they would sell this stock, and begin levying assessments on the stockholders to pay their large commissions, salaries, etc.; and finally, when assessments could no longer be levied, would let the beggared stockholders elect other directors, and they would retire with large fortunes gained in this way: if the directors and officers of one of our great city banks were to conduct the business of their trusts in this manner, what would be thought of it? Would they not be rightly denounced as thieves and rascals, worse than the "City of Glasgow" directors, or than Tweed and his rings? Yet who can point out in what particular such a manner of conducting the business of a trust would be worse than, or even as bad as, that in which most of the Comstock mines are managed to-day?

CORRESPONDENCE.

New Zinc Pigment.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: Some time ago I called the attention of a European professional to your article on the new zinc pigment; and as you have another article on this subject in to-day's issue of the ENGINEERING AND MINING JOURNAL, I thought it might perhaps interest you to learn the opinion of an expert in the manufacture of zinc. Here it is:

"I thank you for calling my attention to an article in the ENGINEERING AND MINING JOURNAL about zinc pigment. A similar product has been sold in Germany and Belgium for the last three years, at first with great success, but rather failing after a longer trial. The color is always a little grayish, and for producing a very pure and white article, I am certain it would cost much more than white lead or zinc-white."

Respectfully, WILLIAM PAULSEN.

NEW YORK, November 23, 1878.

[Mr. Paulsen's correspondent probably refers to the "old zinc-white" (oxide of zinc).—ED. E. AND M. J.]

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: In your last issue, under the head of "Notes," you mention the paper read by Dr. J. Phipson before the British Association at Dublin, on the new zinc-white pigment, which is destined to cause a revolution in the paint trade. Some further details may be of interest, especially as this paint is perfectly neutral toward metal, while it is well known that white lead, assisted by the moisture of the atmosphere, acts chemically upon iron and slowly destroys it.

The inventor of this pigment is Mr. Thomas Griffiths, who, after years of experiment, has brought it to perfection, and it is known to the trade as Griffiths's Patent White, manufactured by the Liverpool Silicate Paint Company, which has a world-wide celebrity for its silicate paints, petrifying liquid, and enamel paints, which were noticed in your issue of June 8th.

At the International Sanitary Congress at Paris, Mr. Alfred Lutschaunig, in a paper on "Innocuous Paint," said that among the many qualities which recommend Griffiths's Patent White, it should not be forgotten that—

"1. Its covering powers exceed by about 100 per cent those of oxide of zinc, and by about 25 per cent those of the best lead paints, and this, too, without being any dearer.

"2. It does not yield to the influence of injurious gases, which destroy ordinary paints, but retains its whiteness under all circumstances.

"3. The most violent heat has no effect; it will not either blister or crack. This result is obtained through the process of manufacture, for the whole is submitted to the action of white heat.

"4. It does not contain any poison, and does not cause any odor.

"5. It does not produce any chemical or galvanic action on metals.

"From the commercial point of view this last quality is of great importance. It has often been proved that lead paint occasions a galvanic action on iron, and that it consequently does not protect this metal against the effects of the atmosphere. In spite of many layers of paint, sea-water corrodes the sides of our iron-clads. The iron scaffoldings which uphold our bridges, our monuments, and various constructions, grow rusty, and, at a given moment, must give way if other supports are not provided. Fortunately, the new paint acts as a true preservative, and does not yield to the influence of oxygen, ammonia, sulphureted hydrogen, salt, or any other destructive and corrosive agent. It is, therefore, a discovery which can satisfy at once the tradesman and the sanitary reformer."

These paints are in use by the Navy Department, the Light-house Board, the chief railway companies, shipbuilders, and painters, and give the best satisfaction. HOWARD FLEMING.

10 PINE STREET, NEW YORK.

METALLURGICAL QUERIES.

1. It frequently happens, as is known to every banker, that in a lot of say five thousand dollars in half-eagles fresh from the mint, the coins will show every grade of color from lemon-yellow to deep orange, or even a decided red. As the material of alloy and its percentage is the same in all cases, what is the explanation? (Silver coins do not exhibit this peculiarity.)

2. Ag in fusion absorbs some twenty-two times its bulk of oxygen, which in solidifying it disengages, with the result of what is known as vegetation or sprouting. Advantage has been taken of this to produce very beautiful forms resembling flowers. What is the mechanical part of the process by which this is effected? R.

[Will some of our readers please answer our correspondent?—ED. E. & M. J.]

CLOSING OF NAVIGATION ON CANALS.—The Delaware and Hudson Canal Company stopped issuing permits at its office in Rondout at noon on the 25th inst., and State Superintendent Clark announces that the Erie, Champlain, Oswego and Cayuga, and Seneca canals will be closed to navigation on December 7th, unless sooner closed by ice.

THE ARTIFICIAL PRODUCTION OF CERTAIN PRECIOUS STONES.

From a strictly scientific stand-point, the synthetical production of mineral substances found in nature possesses great interest, as throwing much light upon the modes and processes which nature employs—questions often of vital interest to the geologist and mineralogist, and which the most careful chemical analysis does not permit him to decide with positiveness. With this object in view, investigators have succeeded in producing, artificially, in the laboratory, a number of mineral substances, which, in chemical constitution, crystalline form, and other physical properties, are not to be distinguished from the natural products; and much information of interest to the chemist and the mineralogist has thus been gleaned. Naturally enough, the thought has often occurred to the ambitious chemist to seek to solve the problem of producing the choicest and most highly-valued mineral products—the so-called precious stones—but until quite recently all such efforts have been, practically, failures, the best results being confined to gems of microscopic minuteness. We do not refer here to the imitations of precious stones—skillfully-colored glasses, paste diamonds, and the like, the production of which has long been successfully practiced—but to the artificial production of the gems themselves.

The exception we have made is of sufficient importance to warrant a special notice in the JOURNAL, and refers to the recent remarkable achievement of Messrs. Fremy and Feil (the first a distinguished chemist, of Paris, and the latter, a glass manufacturer), in producing by artificial methods the colored crystalline varieties of corundum, known as the ruby and the sapphire, in such quantity and quality that the value of these hitherto costly products of nature threatens to be seriously impaired, and the wants of the watchmaker and jewel-cutter will be abundantly supplied for the future.

In seeking for the cause of the success of the experiments of Messrs. Fremy and Feil, we are disposed to attribute it largely to the circumstances that they were wise enough to depart from the beaten track of previous laboratory experimenters, and to operate upon a large amount of material (from 50 to 75 pounds was the quantity employed), and to subject their materials for a considerable period (20 days) to the uninterrupted influence of the very high temperature obtainable in a glass furnace. The chemical reaction of their procedure involved the composition of an aluminous silicate (in this case pure porcelain earth), by means of a metallic oxide (oxide of lead). The process, as carried out at the glass-works of M. Feil, consisted in subjecting a mixture of equal parts of the aforesaid porcelain earth and red-lead in a fire-clay crucible, to the intense heat of the glass furnace continued for several weeks. As the lead likewise attacks the silica which the crucible contains, and may even perforate the walls of the vessel, it was found expedient to place the charged crucible within another, to avoid the possibility of loss of the charge from this cause. At the conclusion of the above-described operation, and the cooling of the crucible, its contents were found to consist of two layers—the upper one vitreous, and consisting chiefly of silicate of lead, and the lower one crystalline, and containing clusters of geodes, consisting of beautiful crystals of alumina. The experiment just described yields colorless crystals; and to obtain such as shall show the rose or deep-red color of the ruby, the addition of 2 or 3 per cent of the bichromate of potassa is necessary. The blue of the sapphire will be produced by the addition to the mixture of a small quantity of oxide of cobalt. As the ruby and sapphire are nothing but colored corundums, it is apparent, from what has been said, that the products of Fremy and Feil's experiment are not merely close and ingenious imitations of these gems, but the veritable gems themselves, in no way to be distinguished from the products of nature's handiwork. Usually these crucible-formed gems are covered with a skin of lead silicate, which may be removed either by means of fused oxide of lead, or of hydrofluoric acid, or by other modes well known to the chemist. At times, however, the geodes are found to contain crystals that are quite pure. They have the same chemical constitution, the same hardness, the same luster, the same specific gravity, and the same crystalline form as the natural ruby and sapphire.

The artificial rubies laid before the French Academy for examination were found to readily cut quartz and the topaz; their specific gravity was 4·0 to 4·1. Like the natural gems, they lost their red color when strongly heated, and regained it again on cooling. The diamond-cutters repute them quite as hard to grind and cut as the natural rubies (and at times even somewhat harder), and M. Jannetaz, a well-known mineralogist who examined them crystallographically, reported that, under the microscope, with polarized light, they presented precisely the same peculiarities as the products of nature.

It is probable, therefore, that these highly interesting discoveries may lead to the artificial production of the ruby and sapphire, and of many other gems, in such quantity and quality as to speedily reduce the commercial value of these natural products, that heretofore have been esteemed to be beyond the skill of the chemist to reproduce.

The only precious stone, which, in the light of these advances, may be said to have yet defied all the efforts to reproduce it, is the chief of all gems—the diamond; but how long will it be permitted to enjoy this enviable distinction?

ULSTER (ELLENVILLE) GLASS-WORKS.

It has been erroneously reported in some of our non-trade journals that the Ellenville Glass-Works have been purchased by a wealthy Boston firm. But we have it from an authentic source that Messrs. Frisbie, Brown & Tisdale, of this city, have secured the very valuable property in question, and that they purpose starting the works under the name of the Ulster Glass-Works, to be conducted in a careful and economical manner, adapting all their affairs and the prices of their goods to the close requirements of the times. The specialty of these extensive works has always been in the line of carboys, demijohns, bottles, and fruit-jars, and the present firm will continue the same.

The inventor of the luminous clock-dials, of which so much has been itemized in the newspapers, appears to be W. H. Balmain, and his secret consists in mixing a phosphorescent salt with paints and varnishes, which will store up light during daylight, and give it out at night. He uses a mixture of lime and sulphur.

ATOMSPHERIC ELECTRICITY.

BY DAVID BROOKS.

(*Concluded from page* 246.)

A lightning-rod, to be effective, should be a better conductor of electricity than the objects it proposes to protect. In most cases it is; but in the case of the steamer Vaderland, its attraction in proportion to that of the ship was less than one to a million, and the chances of its ever becoming the path of an electric discharge are even more remote. In case the lightning struck the masts of the Vaderland, or the Exposition building at Vienna, no harm could follow. But rods are erected upon equally absurd principles to protect oil-tanks. These immense iron vessels containing thousands of barrels of oil, are in great danger of destruction.

Concerning these oil-tanks, reference was made in an article of mine on lightning-rods, published seven years since by the Franklin Institute, from which I quote as follows:

"Oil-tanks are usually well connected to the earth, that is, electrically, by pipes running to the distilleries and for the purposes of filling and discharging these tanks, the connecting pipes being buried in the ground. There have been explosions and fires involving great loss, connected with the manufacture and storage of petroleum, supposed to have originated by being struck by lightning. Do the lightning-rods we see placed so numerously about these tanks have any effect to prevent these catastrophes? In my opinion, not the least.

"These tanks are immense air-tight vessels, with the upper portion in the form of a dome. The lighter portions of these oils rise to the top of the dome. These lighter and more volatile oils are very inflammable, and when mixed with air are as explosive as gunpowder. The iron tank, being, electrically, well connected to the earth, is a conductor exercising great attraction for the electricity of the clouds, and should a discharge from the cloud take place, the stroke would center upon that portion of the dome most elevated, and directly upon the plate of iron in contact with the explosive compound. The iron becomes instantly melted or intensely heated, causing an explosion of the vessel, followed most probably by a frightful conflagration. This tank, which would, upon first sight, seem to be of a material most safe to protect the contents from fire or accident of this nature, is, upon reflection, exceedingly defective, and in imminent peril during times of thunder-storms.

"An iron rod fastened to the side or bottom of the tank, and made to extend say twenty or thirty feet above the dome, would be a part of the tank as a conductor. The point of the rod would be the point to receive the discharge. The lightning might melt an inch or so of the projecting point of the rod, but would not raise the temperature of any portion of the tank proper, or that in contact with the explosive or inflammable contents. Oil-tanks could in this manner be safely protected from the effects of lightning."

At the time this article was published, the president of one of the largest oil companies sent the article to the superintendent in the oil regions. The superintendent answered the president that he "had read the article, and he did not by any means agree with its author. He had all his tanks surrounded with rods, and although they had at times been under sheet-lightning—the most destructive kind—they had served as a perfect protection."

A little later, the company called on one of the insurance offices and recovered sixty thousand dollars damages from lightning. Whether the superintendent's views have been modified or not, I have not taken the trouble to learn; nor have I been able to learn which he now considers the most destructive, sheet-lightning, or chain-lightning, or some other variety.

In the article before referred to, I endeavored to show the great difficulty in making a proper connection of the rod with the earth. To be electrically perfect, it should be of immense size or surface. It is simply the joining of two conductors whose specific conductive capacities differ in immense degree.

To illustrate this, I endeavored to show that to join a copper wire with an iron wire of equal conducting capacity and seven times as large as the copper wire, as it must necessarily be, the end of the copper wire must be enlarged to the full size, or diameter and section, of the iron wire, in order that the joint should have the full conducting capacity of the copper wire. Now, in making a joint with the earth, the end of the lightning-rod must be enlarged in as great proportion as the earth's specific conducting capacity is less.

Dr. Matthiessen gives the ratio of the conducting properties of iron to that with sulphuric acid and water, in the proportion of one of water to eleven of acid—the best conducting liquid known—as 166,000 to 1. My own researches would make ordinary spring or river water's conducting proportion to this acid solution at best in the proportion of about 1 to 500.

Now we will suppose that the rod has a section of one half square inch, and that it terminates in water. The ground-plate, in order to expose a surface to make the joint of equal conducting capacity to a section of the rod, must be two hundred and seventy feet square, allowing that it conducted from both sides; but, in case it was laid horizontally or parallel to the earth's surface, it must, in order to bring the upper surface of the plate into equal conducting lines with the under surface, be placed sixty feet below the surface of the water. Now as the earth conducts only in proportion as it contains water, this plate must be enlarged still further to make up for the proportion of earth contained in this water. I will draw upon the imagination of the reader to fill the balance, in order to get their ground-plate to the requisite size and depth to which it would have to be buried.

Nine hundred and ninety-nine out of a thousand of the defects in lightning-rods are due to this one thing.

For the last twenty years, scarcely a week has passed without a number of patents for improvements in lightning-rods. The effect of granting these patents, without a single exception, is pernicious, because they enable the patentee to make the public trust in the rods when they are deficient in this most essential requisite—complete connection with the earth.

Considering the amount expended on lightning-rods and the great source of danger they are instead of protection, it would be a mercy to the community if the government would take the matter in hand and appoint a commission to go through the country and take down those that can not be made effective.

I have been a very attentive observer of the effects of lightning upon buildings in this city for the last thirty years, and have never yet known the occupants injured. Where gas or water-pipes were used, the buildings were often set on fire by the lightning flying from the rods to the gas-pipes or from metallic roofs to the gas-pipes. A person standing upon a metallic roof would be in great danger from this cause; but if the person be in the first or second story or in any portion of the building that is below the gas or water-pipes, he would be perfectly safe, unless there happened to be a defective lightning-rod attached to the building and this person happened to be between the rod and the pipes at a point where they approached nearest each other.

Gas and water-pipes are the best lightning-rods ever erected, because they are electrically in perfect connection with the earth.

They should extend to the very top of the building, or be connected by a rod running to that elevation. A lightning-rod terminating on a railway track is also perfectly safe; but a rod that is not connected with gas or water-pipes on a railway track is defective, unless the terminal is of such size and depth as would make it enormously expensive.

And those who do not believe in this assertion are respectfully referred to the amount of property destroyed annually in the shape of buildings that have lightning-rods attached, of the latest and most improved patents.

When the discharge is partially obscured from the observer by a cloud and so far that the report is not audible, it is often called sheet-lightning. We can with equal propriety call the light, partially obscured by ground glass, or by a fog "sheet-light."

HEAT LIGHTNING.—In the night-time the flashes of lightning can be seen in the sky apparently coming directly from the earth or horizon. The thunder-cloud, often hundreds of miles distant, is hid entirely from the observer by the convex surface of the earth. The distance to which the light flashes into the heavens is proof that the atmosphere extends much higher than is generally supposed.

BALANCED SLIDE-VALVES.

Many curious attempts have been made within the scope of scientific invention to solve the problem of "balancing" slide-valves. Inventors, inspired with a consuming ambition to devise something which could be entitled a "balanced slide-valve," have really, with mental centrifugal force, thrust upon a suffering community much in this line, which, instead of answering the purpose intended, has only gone to convince the public of the unbalanced condition of their mental equipoise. We do not intend this as a reflection upon inventive talent, nor to divert such talent from its true course, but rather as a kind admonition that misdirected mechanical genius finds little favor in the eyes of a tolerant public. We have really seen a "balanced" slide-valve so thoroughly *balanced* that it was impossible to keep it upon its seat when subjected to steam pressure; and yet the inventor claimed all kinds of imaginary savings for this really *peculiar* device.

Another "balanced" valve consisted of an ordinary slide-valve, to the back of which, and at right angles to its face, was attached a circular piston, equal in area to the face of the valve. The valve, when in motion, "rode" upon the end of the piston-rod, which terminated in a plate traveling in a groove on the back of the valve. Here was simply a case of transferring the friction from the face of the valve to its back, with the odds in favor of an increase rather than a decrease of friction. Yet this *mechanical creation* reveled in the title of a "balanced slide-valve." Thus far the ruling idea with inventors has been that, in order to balance a slide-valve, it is necessary either to exclude the action of the steam from the back of the valve, or else to admit the steam pressure upon the back and face of valve simultaneously. The possibility of constructing a hollow valve, and balancing it by internal pressure of steam, seems to have been ignored altogether. It is hardly a wonder that so many unsuccessful attempts have been made to accomplish a purpose so radically needed. It is many years since steam was introduced as a motive power, and yet to-day the means of converting its force into work are not very materially different from those employed in its pioneer usage. Steam-engines are built day after day with some new-fangled, improved, or automatic cut-off valves, which in some cases do effect a saving of steam and thereby fuel, but in many more they do this even at an increase of friction necessitated by great increase of valve surface.

Little or no advance has been made in balancing the locomotive slide-valve. The pressure upon the ordinary locomotive valve amounts even to tons, yet few attempts have been made to lessen the enormous friction such pressure must entail. Some of our leading railroads have adopted friction-rolls to overcome the great loss, the success of which, however, is questionable.

That a valve may be "balanced" *for a purpose*, it is necessary that it should embody the following conditions: 1. It must "ride" upon its seat with the least possible friction. 2. It must accomplish this without leakage or "blowing." 3. It must be so constructed that any wear upon its face or faces can easily be provided for. 4. It must combine facility of inspection with durability of construction. 5. Its form must not interfere with the expansive use of the steam; or, in other words, it must possess the feasibility of a "cut-off." 6. It must be free from any unsteady or "wabbling" motion when the engine is running by its own momentum independently of steam pressure: this last is an item often overlooked in the construction of slide-valves, and which has frequently been the cause of much undue wear both upon valve faces and seats.

PARTIAL DESTRUCTION OF A GLASS FACTORY IN PHILADELPHIA.—A portion of the Hero Glass-Works, Philadelphia, was destroyed by fire on October 12th. The portion burned was about eight hundred and twenty feet in length and thirty feet in width, and consisted of frame shedding, used for storing glass in packages. The two-story brick building, about seventy feet square, used as a factory, was also destroyed. The fire is supposed to have been the work of an incendiary, as the buildings had been closed for several days previous.

SAN JUAN (COLORADO) SILVER MINES.

Special Correspondence of the Engineering and Mining Journal.

In this letter I endeavor to give a description of two of our most celebrated mining properties, and which are situated, you may almost say, "in town." But though having contemplated the undertaking for some time, I must admit that I have fought shy of it hitherto, for the reason that one of them has puzzled experts and miners of upward of thirty years' experience; and moreover, a man has to be remarkably careful as to what he says in describing prospects, to which class both of these properties undoubtedly yet belong. He sees uncovered a splendid ore-body, and is apt to draw on his imagination as to its continuity and increase of richness with depth, etc. Here, however, he is not so liable to go wrong; but where men *do* go wrong is in prospects where there is a large vein of quartz (and we have them here up to 300 feet in width) with rich mineral scattered through it, picked pieces of which will give high assays, and that is all. The theory that the "mineral will concentrate lower down," and that the ore-body will increase with depth, has here, as far as I have seen, proved a fallacy; but start with well-defined walls, proper vein matter, and a good body of ore between them, and galena for the base of the metals, and one may pretty surely rely on increased richness with depth; at least, such has been our experience so far.

Furthermore, as my studies and practice in mining extend over two years only, I can not give you an "expert's" description of the properties, but simply as they appeared to me; and allowances may be made on that score for apparent incongruities.

OURAY.

Ouray is one of the most picturesque and at the same time the most civilized frontier mining camps I have yet been in. The population numbers about 700, and of stores we have 3 grocery, 2 dry-goods, 2 hardware, 1 millinery, 2 drug, 2 butchers', 1 saddler's, and 3 shoemakers'; 2 hotels, 1 restaurant, 1 brewery, 2 assayers, 1 crushing and sampling mill, 1 sawmill, 3 churches (two too many), and the usual complement of saloons, which retail the vilest of compounds under the name of whisky, and provide facilities for playing the pleasant, but somewhat uncertain, game of "draw-poker." The dance-house, usually incidental to our mining camps, is a pitch of metropolitan refinement at which we have not yet arrived. When I said three churches, I should have said three congregations; for the Methodists and Presbyterians have buildings, but that of the Episcopalians is not yet finished, and the Gospel and Justice are at present dispensed in the same room in the court-house.

Below town we have four saw-mills and four smelters of four, ten, fifteen, and thirty tons' capacity per diem, respectively. These are all within four or five miles of Ouray, down the toll-road which leads to the outer world. Below these, along what is termed "the Park," and watered by the Uncompahgre River, extends for ten miles a series of splendid ranches, where the owners raise vegetables and "garden-sass" for the miners, and where there are also a few good dairies or "milk-ranches," as they are here called. But in these latter particulars we are as yet sadly deficient; the demand for such supplies is tremendously in excess of the supply, and for three parts of the year it is almost impossible to get milk, butter, and eggs. This fall I had to pay ten cents a pound for potatoes; onions, 12½ cents; turnips, ¾ of a cent; carrots, parsnips, and beets, five cents; tub butter, 50 cents; and eggs, 60 cents per dozen.

The lack of such supplies, at proper prices, is owing to the fact that this land is on the Ute Indian reservation; and why our government, in its infinite wisdom, should have given the Indians, "who toil not," all the only available agricultural and pastoral lands contiguous to our immense mining district, "no fellah," as Dundreary says, "can evah find out." If the series of pleasure excursions to this district, which Uncle Sam has repeatedly and kindly organized for a few of his favorite officers, and whose tomfoolery, when they get here, is facetiously termed "treating with the Utes," should accidentally result in the removal of these pleasant aborigines to some more remote hunting-grounds, we shall have more farmers and dairymen, a greater abundance of proper food, less mountain fever in the spring, lower prices, and more workers of mining properties.

BEGOLE'S "MINERAL" FARM—THE OURAY BONANZA.

My partner came down with me from our eyrie yesterday to Ouray, and about three o'clock in the afternoon we determined to visit Begole's "Mineral Farm," as he had heard so much of this tremendous mineral deposit, and wished to examine it. So, saddling my pony, and taking him along to carry back an ore-sack full of specimens, we started for the farm, distant one mile from town, and only a few hundred yards from the Mount Sneffles and Cañon Creek toll-road, now completed a distance of two miles. I did not have my aneroid with me, but the altitude of the farm above town will not, I think, exceed 800 feet. The road zigzags up the hill, and you could drive a buggy up it with ease. Arriving at their comfortable log-house, we found the owners, Messrs. Gus Begole and John Eckles, at home, and Gus, with his proverbial politeness, went over the property with us. Begole is yet a young man, but since 1869 has been diligently prospecting in Arizona, New Mexico, and Colorado. He made money at placer mining in Arizona, and was all over the ground where the now celebrated Silver King and other rich mines in its vicinity are being worked, and brought out wonderfully rich specimens from them; but silver was not what he was looking for then; and at last, getting tired of fighting Apaches and Navajos, he came to prospect in this State, and in 1875 staked the property of which I write. Since that time he and his partner, single-handed, have been quietly and slowly developing their "farm;" but the immense area that it covers, the number of openings, and the fact that they have another large and valuable property, the Veta Madre, in Cunningham Gulch, in the Animas District, have prevented their gaining any great depth on it as yet.

Their four claims cover about forty acres of ground; and when I arrived here a year ago, it was the prevailing idea among our miners that it was a horizontal deposit covering that whole area; indeed, a friend of mine, who visited it before me, reported to me that if I "stood in the center of the farm and threw a stone in any direction, and then knocked off a piece of rock where it fell," I should find ore; and this was the general impression at that time. Now, however, it is generally conceded that there are four parallel veins, or certainly three, as Nos. 3 and 4 seem to run joining one another, while between Nos. 1 and 2 there is a division of non-mineral-bearing rock. There are, it seemed to me, four mineral (ore) streaks, each from ten to twenty feet wide, and the ore is of two entirely different kinds. One is a bright, fine galena, associated with heavy spar, and running about 120 ounces of silver and 40 per cent of lead; there is also a streak of very solid low-grade galena, carrying a good deal of antimony, and about 30 ounces of silver. The other is silver fahlerz, or highly argentiferous gray copper, in a gangue or matrix of quartzite; at least, it is called quartzite here, but it looked to me like a combination of limestone, sandstone, and quartz, mixed together, and finely granular. This ore has run at the mill from four hundred to seven hundred ounces of silver per ton, and assays as high as 3000 ounces have been had from it. There is still another streak in a similar gangue, but much decomposed, and carrying what seemed to be "sulphurets" or decomposed silver glance; and Begole informed me that this streak also carries chloride of silver, and will run upward of 500 ounces.

OURAY, Nov. 14, 1878. W. W.

(TO BE CONTINUED.)

UTAH MINING NEWS.

Special Correspondence of the Engineering and Mining Journal.

Utah has made a good record within the last month in the consummation of two large mining sales. One, the Great Bonanza or Horn-Silver mine, located in the San Francisco Mining District, about two hundred and twenty miles south of Salt Lake City, and about one hundred and fifty miles from the terminus of the Utah Southern Railroad; Jay Cooke and party are the purchasers. Report says that the property is accepted. The party are now *en route* to Philadelphia to complete the negotiations. The sum to be paid is five million dollars.

The Horn-Silver mine is said to disclose the largest body of lead-silver ore in the world. Your correspondent will visit the mine next month, when full details of the works and mine will be given.

The carbonate group of mines located on Kesler's Peak, Big Cottonwood Mining District, Utah, were sold Nov. 19th through the agency of J. R. McBride for the sum of $165,000. The money was paid by Frank G. Brown, a broker and real-estate agent of New York City, acting for six capitalists of that city. The owners were John W. Kerr, Henry Wadsworth, John P. Lawson, and George C. Harkin. The group consists of the Sailor Jack, Baker, Defiance, and Carbonate lodes.

The mine has been under the management of Mr. Lem. U. Colbath since last spring, and has produced during that time about $100,000 worth of ore.

The investment is considered a good one, and our Eastern friends are to be congratulated on securing one of the most valuable mines in Utah at a nominal price.

ARCHIBALD.

ELECTRIC LIGHTING.

THE BILLINGSGATE FISH MARKET in London is to be lighted with electricity.

THE electric light has been introduced into some of the London theaters. Several foci of light are produced through one machine, and these can be made to burn independently of one another. The expense of the motive power and the carbons used in the lamps will, it is believed, enable a light to be produced at about half the cost of gas. The strong light is said to be admirably adapted to bringing out stage effects, and the experiments have been satisfactory.

THE ELECTRIC LIGHT IN FACTORIES.—Mr. J. Lloyd Haigh, the contractor for furnishing wire for the East River Bridge, has made a contract for lighting his works in South Brooklyn with electricity. He calculates that he will ultimately save a large percentage of his gas bills by the change. One eletric light is to be placed in the middle of the street to afford better light to workmen passing to and from the different buildings of the factory. Mr. Haigh was the first to use a telephone between New York and Brooklyn.

A SPLENDID OPENING FOR GAS.—At a meeting of the Franklin Institute in Philadelphia, on the 21st inst., the chief attraction of the evening was the new "Otto Silent Gas Engine," one of which was placed upon the stage, and, after an explanation of its various parts, as shown upon a screen by the aid of a stereopticon, was set to work. It was claimed that for persons requiring a moderate use of power this motor is the best that could be devised. It is at all times ready for use, either continuously or intermittently; can be started and stopped readily; burns not more than 4½ cents' worth of gas per hour per horse power; is entirely free from the danger of explosion, as no steam is used; there are no coals, ashes, dirt, or smoke; costs nothing when idle, and but little when running, and is almost noiseless. The charge of gas (or petroleum) and compressed air burns readily, but the combustion is automatically regulated, without shock to any of the parts, in proportion to the power developed.

CAVING IN OF VALUABLE COAL MINES.—The Philadelphia *North American* of the 25th inst. says: "The outskirts of Scranton, in the region of the Bellevue colliery, one of the most valuable of the Delaware, Lackawanna, and Western Company's mines, is threatened with a terrible disaster. There is little doubt that the mine is caving in. The first indication of the coming crash was felt a few days ago, in what is known among miners as a 'squeeze,' which caused several of the props sustaining the roof to give way. This was followed by the falling of a large area of the worked-out portion of the mine. Several houses were disturbed and lost their balance badly by the shock, and a large chasm suddenly appeared in the roadway traversing the unsettled region. Wells are drying up, and great fissures continue in close proximity to many of the dwellings. The phenomenon is said to have started in a portion of the mine worked out about twenty years ago, and left without proper support of roof. It has now extended to the most valuable part of the colliery, and thrown about 200 men out of employment, in addition to creating a small panic among the miners' huts overhead."

NOTES.

A HINT IN HYDRAULICS.—As water absorbs a certain quantity of air, the air-chamber of a hydraulic ram in time becomes emptied of air and filled with water. This will always happen sooner or later, as the water contains more or less air, or flows from a rapid stream or a quiet spring. The remedy is to remove the air-chamber and empty it of water and replace it, whenever the ram stops. By not understanding this, many persons unjustly find fault with this useful machine.

A BRIDGE MADE OF OLD RAILS.—A correspondent of the *Railroad Gazette* informs that journal that at the workshops of the Prince Edward's Island Railway a bridge is being constructed from old iron rails. The plan of the bridge is a lattice girder, 31 feet span. The top chord is formed of three rails laid parallel; the bottom chord is formed in like manner, the lower rails being placed in an inverted position. The diagonal bracing is formed of short pieces of rails, bent at the upper and lower ends and twisted with a half-turn in the middle, so as to cause the flanges to come in conjunction with the flanges of the top and bottom chords. The flanges are then riveted together with ⅜-inch rivets. At each place where the braces and counters meet the chord, a half-inch iron plate is introduced, which binds the three rails of the chord together. The rails used are 40-lb. iron of the Sandberg pattern. The bridge is designed by Mr. G. C. Cunningham, chief-engineer of the road.

MOLTEN CARBONATE OF SODA FOR PUDDLING.—In connection with Dr. T. M. Drown's experiments on the purifying action of molten alkalies on pig-iron, it may be of interest to cite the efforts which E. Vanderkeyn has made to use molten soda in puddling. In a recent number of the *Moniteur Industriel* he states that the main benefit to be derived is the elimination of silicon, especially from coke irons, and that experience has taught him that two and one half times the amount of silicon in carbonate of soda is sufficient. The best time to charge the alkali is three or four minutes before the iron comes to nature, care being taken to close the damper so that the powdery material is not carried off by the draught. Mr. Vanderkeyn has also found that phosphorus and sulphur are reduced in amount, and he considers the manufacture of high-grade iron from ordinary pig possible by the use of alkalies. Inferring from experience in the metallurgy of another metal, we would add that the purifying action of molten caustic alkalies is still more energetic.

THE DARIEN CANAL.—This perennial project, which is to do for America what the Suez Canal has done for the old world, has been fathered by De Lesseps, who wants to undertake its construction, now that he has successfully united the Mediterranean and Red seas. The distinguished Frenchman brought the matter before the international congress of commercial geography at Paris in September, and he thought that as Egypt's canal had cost $99,000,000, the Darien project might be put through for $500,000,000, and be made to pay. The routes of Lieutenant Wyse, the young French naval officer, who has recently conducted two expeditions to the isthmus for the international committee of exploration, which involve tunnels five or ten miles long, were proposed. The congress was taken with the idea, and resolved that there had been surveys enough, and that an international committee should meet as soon as possible to organize a company to raise funds and put the canal through.

RECORD OF NEW RAILROAD CONSTRUCTION.—The *Railroad Gazette* for November 15th contains information of the laying of track on new railroads as follows:

Pittsburg Southern.—Extended from Finleyville, Pa., southwest to Washington, 6 miles. It is of 3-ft. gauge.

Cumberland and Ohio, Southern Division.—The first track is laid from Lebanon, Ky., south 5 miles. It is of 5-ft. gauge.

St. Paul and Pacific.—The track of the *St. Vincent Extension* has been extended northward 30 miles to the Manitoba line at St. Vincent or Emerson.

Atchison, Topeka, and Santa Fé.—The track of the *New Mexico Extension* is extended from Trinidad, Col., south 12 miles.

This is a total of 53 miles of new railroad, making 1777 miles completed in the United States in 1878, against 1867 miles reported for the corresponding period in 1877, 1931 in 1876, 1128 in 1875, 1594 in 1874, 3228 in 1873, and 5982 in 1872.

GILDING ON GLASS.—A new process by M. Dodon is thus given by the *Moniteur de la Céramique:* Gold, chemically pure, is dissolved in aqua regia (1 part nitric and 3 parts hydrochloric acid). The solution effected, the excess of acids is evaporated on a water-bath till crystallization of the chloride of gold takes place; it is then taken off and diluted with distilled water of such quantity as to make a solution containing 1 gram of gold to 200 cubic centimeters of liquid; a solution of caustic soda is then added until the liquid exhibits an alkaline reaction. The solution of gold is now ready for reduction. As a reducing agent, an alcoholic solution of common illuminating gas is used. This is prepared by simply attaching a rubber tube to a gas-jet and passing the current of gas for about an hour through a quart of alcohol. This liquid (which should be kept in a closed vessel) is added in quantities of from two to three cubic centimeters to 200 cubic centimeters of the alkaline solution of gold before mentioned; the liquid soon begins to turn to a dark green color, and at length produces the metallic layer of gold of known reflecting power.

As an improvement on the process, as well as for convenience in executing it, there may be added to the alcoholic solution of gas an equal quantity of glycerine (28° to 30° Baumé) previously diluted with its own volume of distilled water.

If the gold employed is an alloy, the foreign metals must in all cases be first removed; and especially the least traces of silver, because the very smallest quantity of this metal totally prevents the regular and uniform deposition of the gold.

The bath thus once prepared, it is proposed as a method of gilding mirrors, and also for all the articles of various branches of industry where this process of gilding could be used with success and to advantage, such, for instance, as boxes, necklace beads, candlesticks, glass ornaments, frames of table mirrors, cups, saucers, spoons, lanterns, and reflectors, and for objects generally in glass or crystal that are capable of being completely gilded.

SECRET REMEDIES.—During the past twenty years, the business of manufacturing quack nostrums has assumed enormous proportions, until now it seems that it would be almost impossible to kill this hydra-headed monster. The legitimate drug trade has been greatly damaged by the miserable and in most cases detrimental preparations of the charlatans who have covered the country with their flaming circulars and advertisements. For the majority of those engaged in the business, the making of quack medicine has proved a profitable venture; but the people are opening their eyes, and the quacks can not much longer play upon the credulity of the public. Of the thousands of the patent medicines introduced to the public within the present decade, a very few possess any merit. The immense sales made by manufacturers were due to their liberal advertising, and not because the remedies themselves offered for sale possessed any special therapeutic value. There is in New York to-day a man who spent in one year for advertising a cure for catarrh one hundred and eighty thousand dollars; now he does not do a business of ten thousand dollars per year. A hundred thousand of people have tried his remedy, and, finding it worthless, would not purchase the second bottle. Helmbold, who made an immense fortune in the patent medicine business, is to-day working for another man, either on salary or commission, his fortune having melted away, a large portion of it being spent in endeavoring to make the public purchase medicines in which but few had faith.

Some limit should be fixed to the wholesale poisoning of people by patent medicines, and some English pharmacists have taken the initiative step in the matter. At a meeting recently held in England, the importance was urged of fixing some legal limits to the wholesale poisoning of the people by these quack doctors, who, in some cases, have no knowledge of the properties of the different drugs used in their vile preparations. It was proposed that, even if impossible altogether to suppress the reaction of dishonest quackery upon vulgar superstition, the venders of nostrums be compelled to divulge the composition of their wares, and prevented from publishing mischievous and mendacious advertisements concerning them. Among the examples cited, including sundry "hair-restorers," which, in direct contradiction to their advertised pretensions contain poisonous quantities of lead, the most glaring one is a largely certificated "Sure Cure for the Opium Habit," which is found, on analysis, to give two grains of morphine to the dose, recommended to be taken thrice a day. It is scarcely to be expected that American apothecaries, most of whom derive the larger part of their income from the sale of these secret nostrums, will join in the crusade preached by their British cousins; but it would be well if the American public were taught that ninety-nine hundredths of the proprietary medicines which flood the market are the products of uneducated impostors, either wholly inert or positively deleterious.—*Druggist's Advertiser.*

REMEDIES POR "KNOCKING" IN STEAM-ENGINES.—Mr. Stephen Roper, M.E., says on this subject: "While it may be possible in most cases to locate the knocking in steam-engines, and explain the causes from which they arise, it is hardly possible to prescribe a remedy for all, as in many instances it must arise out of and be determined by the circumstances of the individual case. The most practical method of remedying the knocking induced by the crank-pin being out of line is to place the crank-shaft at right angles with the center of the cylinder, remove the old crank-pin, re-bore the hole so as to bring the center of the new pin perfectly in line with the axis of the cylinder, and replace the old pin with a new one. The knocking induced by the wrist-pin and crank-pin becoming worn oval, may be remedied by filing them perfectly round; but the knocking caused by the crank-shaft journal being worn out of round is very difficult to remedy; in fact, there is hardly any remedy for it, except to remove the shaft, true it up in a lathe and refit the boxes which operation is attended with a good deal of difficulty, more especially when the engine is larger.

"Knocking in the boxes on the crank-pin and cross-head or valve-rod may be remedied by filing out the boxes and readjusting the keys, or by putting a liner behind or in front of the boxes when there is not sufficient draught in the keys and gibs. Knocking in the steam-chest, caused by looseness in the valve connections, may be remedied by readjusting the jam-nuts or the yoke. Knocking arising from this cause manifests itself more frequently when steam is shut off from the cylinder, preparatory to stopping the engine, than when the engine is running. The lost motion is taken up in the valve connections by the pressure of the steam on the back of the valve.

"Knocking in the piston is generally caused by the rod becoming loose in the head, and, if it continues for any length of time, it destroys the fit of the rod in the hole. The only practical remedy under such circumstances is to remove the rod, re-bore the hole, and bush it or thicken the rod at that point by welding, and fit it to the head after the hole is rebored perfectly true. Knocking in the follower-plate is generally caused by the bolts being too long, or from dirt being allowed to accumulate in the holes, which prevents them from entering sufficiently far to take up the lost motion of the plate, and may be remedied by shortening the follower bolts, or removing the deposits from the bottoms of the holes, as the case may be.

"The knocking caused by shoulders becoming worn in the cylinder at each end can be remedied by re-boring the cylinder and making the counterbore sufficiently deep that a part of one of the rings will overlap it at each end of the stroke. Knocking caused by shoulders becoming worn on the guides can be remedied by planing the guides and making the gibs or shoes sufficiently long that they will overrun the guides when the crank is at either center. The knocking induced by any of the foregoing causes is generally a source of great annoyance to the engineer, as any attempt to adjust the boxes on the cross-head or crank-pin, or the piston-packing in the cylinder, generally aggravates the cause of the knocking, as any adjustment of the connecting-rod boxes alters the position of the piston in the cylinder and the cross-head on the guides and causes them to strike harder against the shoulders.

"Knocking caused by the valve or valves being improperly set may be remedied by removing the bonnet of the steam-chest and adjusting the valve, so that it may move uniformly on its seat, thereby giving the same amount of head at each end of the stroke; then, if the valve is well proportioned, and the connections thoroughly fitted and skillfully adjusted, there is no reason why the engine should knock from this cause. But the knocks arising from bad proportion in the valve or steam passages are the most difficult of all to remedy, as they are inherent in the machine."

THE SUTRO TUNNEL AND ITS PROJECTOR.

WITH TWO SUPPLEMENTS.

The description which we give this week of the Sutro Tunnel, the greatest mining enterprise that has ever been undertaken in this country, would not be complete without a sketch of Mr. Sutro, who originated it, and to whose indomitable perseverance the success of the great work is certainly due.

Adolph Heinrich Joseph Sutro was born at Aix la Chapelle, in Rhenish Prussia, April 29th, 1830, and is consequently now in his forty-ninth year. His father, who owned a large woolen factory, employing many hundreds of persons, gave the advantages of an excellent education to his children. The subject of our sketch, whose inclinations were in the direction of science and mechanics, made such good use of these opportunities that at seventeen he left the high school with a diploma entitling him to enter the Prussian military volunteer service without further examination. Instead of doing so, however, he was at once placed in charge of the factory, in every department of which he had served a practical apprenticeship.

In December, 1847, his father died, and in March, 1848, the revolution broke out in France, which soon extended all over Europe, and so disturbed commercial relations that it necessitated the closing of the Sutro factory. Young Sutro, who devoted all his time to scientific studies, was commissioned the following year, 1849, to establish a woolen factory at Memel, in the Baltic province of Prussia, to which he shipped the machinery and materials from Antwerp, and took a colony of employés overland. The difficulties attending the establishment of this factory were enormous, and gave Mr. Sutro at the age of nineteen an experience such as would try most older men. In 1850, resigning his position, he returned to Aix la Chapelle, and found that his family, consisting of mother, six sons and four daughters, had decided on settling in the United States, where an older brother had already preceded them. They sailed from Antwerp in August, 1850, and on arriving in New York, the subject of our sketch decided to seek his fortune in California, which was then beginning to attract attention as a promising field for young men. He immediately sailed, via Panama, for San Francisco, where he commenced at the age of twenty, and almost without money, that life of active and successful enterprise and self-reliance which entitles him to this notice in our columns.

At first engaging in mercantile pursuits, which were generally financially successful, Mr. Sutro experienced the usual ups and downs of Western life, though, to his credit be it said, he never entered into the dissipations and gambling which were characteristic of California and other Western mining districts. He was early interested in the development of the gold mines, and in the spring of 1860 crossed the range to visit the Comstock lode, which had been discovered the previous year. After a careful examination of the mine developments and the surrounding country, Mr. Sutro was convinced, even at that time, that the Comstock was a true fissure vein, and he pointed out the advantages and desirability of opening it by means of a deep adit, run in from the foothills on the Carson River. His project was, however, ridiculed as chimerical and impracticable.

Before leaving Virginia City, Mr. Sutro became interested in several of the mines, and on his return to San Francisco, assisted by an experienced German metallurgist, Mr. Ramdohr, he commenced the chemical study of and experiments with a process for the treatment of the Comstock silver ores, and established small metallurgical works in San Francisco for that purpose. In 1861 his process was so far perfected that he induced other parties to join him in the establishment, in 1861, of a mill and amalgamating works at Dayton, distant about seven miles from Virginia City. In the spring of 1862 the works were enlarged, and commenced to show a profit of $10,000 a month, though the cost of the whole establishment had been less than $30,000; but in 1864 the mill was burned down, and the insurance was absorbed in the payment of liabilities incurred in mining operations, leaving Mr. Sutro again almost without means. From that time he determined to devote himself altogether to the great tunnel project he had so long and carefully studied; and though the realization of such an undertaking must have seemed almost hopeless to a man possessing only his slender means, yet by wonderful perseverance under the most trying discouragements, he has at last succeeded in carrying through his great work. What these trials and difficulties were, we may learn from Mr. Sutro himself in a speech delivered to the miners, at Virginia City, in October, 1874.

On February 4th, 1865, the Nevada Legislature granted Mr. Sutro a franchise which gave him the right of way similar to that usually granted to toll roads, the question of tolls being left to voluntary agreement between Mr. Sutro and the several mining companies.

After some lengthy negotiations, the larger portion of the mining companies then working on the Comstock lode, representing 95 per cent of its value, in order to establish a basis for procuring the necessary capital, agreed to pay a toll of $2 per ton on every ton of pay-ore which should be extracted after the tunnel should be completed, and after it should benefit each respective mine, and contracts were entered into making this charge a lien upon the mines for all future time. It was then considered necessary, as a security to capitalists, that the United States government should pass a law embodying the general features of the act of the Nevada Legislature and these contracts; for at that time the companies working the mines on the Comstock lode held them at mere sufferance from the government, the title or fee being in the United States. In consequence, on the 25th of July, 1866, Mr. Sutro procured the passage of an act by Congress, now commonly known as the "Sutro Tunnel Act," which gave the right of way over the public domain, the right to purchase some land at the mouth of the tunnel, the ownership of all new mines which should be discovered for 2000 feet on each side of the tunnel, and made it a lien on the land occupied by these mining companies to pay the same rates of charges which had previously been agreed upon in the above-mentioned contracts. In other words, the United States government, as owner of these mineral lands, entered into a direct compact with Mr. Sutro for the construction of this tunnel, and only referred to the contracts in order to establish the rates which should be paid.

"After this law of Congress had been passed," Mr. Sutro says, "I placed the subject before prominent New York capitalists and explained its merits. They looked upon it as a magnificent one, and so expressed themselves in a letter addressed to me, at the same time stating that if the mining companies and the people of the Pacific coast familiar with the value of the mines would evince their confidence in the undertaking by subscribing half a million dollars toward the work, they would be willing to invest three or four or five million dollars required to carry it to completion. In consequence, I returned to San Francisco, and at once placed the law of Congress and the letter addressed to me by these capitalists of New York before the mining companies, and showed them that by becoming shareholders in the Tunnel Company they would derive much benefit. I showed them that, while their mines were productive, they would not feel the paltry amount which they might have to contribute in the way of tolls, and while unproductive, the dividends derived from the tunnel would enable them to develop their mines without the aid of assessments. The honest portion of the mining trustees saw the power of my argument; and after the subject had been considered for some weeks, they subscribed over $600,000, while private individuals subscribed over $200,000 to the stock of our company."

Mr. Sutro then asked the Legislature of Nevada to memorialize Congress to aid by a loan the execution of the gigantic enterprise; and so forcibly did he show the advantages which would result by the proving of the lode at so great a depth below any workings then existing on it that he not only convinced the Nevada Legislature, which passed the following concurrent resolutions, but he so clearly demonstrated the value of the tunnel that he excited the desire of mining manipulators to get control of the enterprise, especially as it was expected that Congress would subsidize it liberally. The Bank of California then commenced an opposition which has been kept up ever since.

SENATE CONCURRENT RESOLUTIONS, NO. 70, IN RELATION TO ADOLPH SUTRO.

Resolved, by the Senate, the Assembly concurring, That the Legislature of Nevada recognize, as already due, and cordially extend the thanks of the people of this State to Adolph Sutro, for his great services in originating the plan of the "Sutro Tunnel," and urging aid and organization for undertaking work upon the same; and be it further concurrently

Resolved, That we have entire confidence in the ability of Mr. Sutro to present to Congressmen and capitalists the claims of the enterprise referred to, knowing that he will prepare with skill, and clearly exhibit, the whole statistical and politico-economical argument bearing in its favor without overlooking or exaggerating any of its merits.

January 25th, 1867; read and passed unanimously.

JAMES S. SLINGERLAND, President of the Senate.

B. C. BROWN, Secretary of the Senate.

Received from the Senate January 25th, 1867. Read and passed unanimously. R. D. FERGUSEN, Speaker of the Assembly.

A. WHITFORD, Clerk of the Assembly.

The first step in this opposition was to cause the mining companies at their annual meetings in 1867 to repudiate the subscriptions which their trustees had made. The effect of this was to induce the private citizens who had subscribed to repudiate their subscriptions also; for they thought that with the active opposition of the Bank of California, it would be impossible to carry the work through.

The next move was to organize the Virginia and Truckee Railroad Co., to which they made the several mining companies subscribe the precise amounts they had promised to the tunnel enterprise; they also got the counties of Storey, Ormsby, and Lyon to take $650,000 of the railroad company's bonds.

Mr. Sutro describes very forcibly the tremendous obstacles he had to overcome in carrying through his great work. He says:

"I saw it was useless for me to attempt to get assistance on the Pacific Coast with such opposition, and returned to New York, where, on my arrival, I found a placard in the office of the Bank of California, announcing that the Savage Mining Company had repudiated its subscription of $150,000. It was placed there as a warning to the people of New York, so as to prevent my getting any financial assistance at that place. I next proceeded to Europe, where I met many scientific men in England, France, and Germany. I placed before them my plans for the construction of this tunnel, and many were the letters addressed to me by these distinguished men, congratulating me on the great work which I had undertaken. I tried to get financial aid during my journey; but at that time a war between Prussia and France was imminent, and it was impossible to secure any funds for a foreign enterprise.

"In December, 1867, I returned to the United States, and, proceeding to Washington, presented to Congress the memorial which the Nevada Legislature had passed.

"Matters were progressing in the most promising manner, notwithstanding the secret machinations of the Bank of California to defeat me. They had their agents at Washington, who had instructions to do every thing in their power to prevent my success, and many letters and telegrams were sent when they found that my prospects were good, one of which I here reproduce:

VIRGINIA, NEV., January 15, 1868.

To the Hon. Wm. Stewart and James W. Nye:

We are opposed to the Sutro Tunnel project, and desire it defeated if possible.

WM. SHARON,
CHARLES BONNER,
Superintendent Savage Company.
B. F. SHERWOOD,
President Central Company.
JOHN B. WINTERS,
President Yellow Jacket Company.
JOHN P. JONES,
Superintendent Kentuck Company.
J. W. MACKEY,
Superintendent Bullion Company.
THOS. G. TAYLOR,
President Alpha, and Superintendent Crown Point and Best & Belcher Company.
F. A. TRITLE,
President Belcher Company.
ISAAC L. REQUA,
Superintendent Chollar-Potosi Company.

"The measure would certainly have passed at that session of Congress had it not been for the impeachment trial of Andrew Johnson, which commenced at about that time, and which occupied so much of the remainder of the session that no time was left for any legislation of the character such as I asked.

"During the summer of 1869 the House Committee on Ways and Means visited Virginia City, and I explained to them the merits of our work. I saw that the Bank Ring were becoming more and more anxious to get hold of our rights and franchises, and since they were prejudicing the people through a venal press against me, I concluded to address the people of Virginia City on the questions involved. On the 19th day of Sep-

tember I addressed the miners of Storey County, at Piper's Opera House, in Virginia City; and, in a lengthy speech, explained to them the merits of our undertaking, and showed up the villainous machinations of the Bank Ring. At the conclusion of my speech, the excitement was so intense that the miners talked of hanging the leaders of the Bank party, and I had now to go among them in order to pacify them and prevent them carrying their threat into execution.

THE WORK COMMENCED.

"Shortly after I had made this speech, the Miners' Union agreed to subscribe $50,000 toward starting the work, and the day was fixed for the commencement of the actual excavation on the tunnel. On the day announced, the people marched, with bands of music, to the proposed site, and the first blow of the pick was struck. Since that time the work has been going on without interruption—day and night.

"The Bank Ring became alarmed at seeing the work thus progressing, and, in the spring of 1870, while I was superintending our work, I received telegrams from Washington stating that a bill had been introduced called 'An Act Explanatory of the Sutro Tunnel Act,' and I hurried to Washington immediately, and found that such a bill had been introduced by Thomas Fitch, the only Representative in Congress of Nevada.

"His bill, in order to keep it dark, had not even been printed. Its object was to explain away our rights. I appeared on the first opportunity before the Committee on Mines and Mining, and found myself opposed by all the legal talent the California Bank could muster at Washington. I had no money to employ lawyers, and though unaccustomed to cope with gentlemen of the legal profession, I was compelled to, and did appear before that committee to argue my own case; and after the most thorough and careful examination into all the questions involved, eight members out of nine composing that committee came to the conclusion that the proposed legislation was an outrage on our vested rights. The one man who advocated the passage of that bill was Aaron A. Sargent, another tool of the Bank of California and the Central Pacific Railroad Company. I supposed the matter would now be dropped, but I was much mistaken; for when the Mining Committee was called in the House, I found that Sargent appeared with his minority report of one, advocating the passage of the Fitch bill, notwithstanding the adverse report of eight out of nine of the committee. After a severe contest, lasting through the morning hours of three days, a vote was taken, and the Bank party got 42 votes, while our side had 124.

ADOLPH HEINRICH JOSEPH SUTRO.

"I now thought the controversy ended, but not more than thirty days had elapsed when a general mining bill came up in the United States Senate, which I found to contain a clause which would have accomplished the same object as the Fitch bill. I submitted the question to that able lawyer and honorable gentleman, Senator Lyman Trumbull, of Illinois, and he agreed to offer an amendment, when the subject should come before the Senate, to the effect that nothing contained in the bill should be construed to interfere with our rights.

"When the bill was reached, Senator Trumbull inquired of Senator Stewart, of Nevada, whether any thing in that bill was intended to affect the rights of Sutro. Stewart replied, Not in the slightest degree—there was nothing in the bill which could, even remotely, affect him. Trumbull then said, that being the case, the Senator from Nevada would not object to the adoption of an amendment so declaring; but Stewart said he did object, and he made a most desperate fight to defeat it. After a full discussion, embracing part of two days, a vote was taken, and only one solitary nay was uttered against the amendment. Need I tell you that this nay was Stewart's?

"Several other attempts were made in the following sessions of Congress to smuggle through underhanded legislation intended to affect our rights, but each of them was signally defeated. In the spring of 1873 I proceeded to Europe. In the fall of that year, while I was in London, it was reported by agents of the Bank of California, in that city, who kept watch of my movements, that I had succeeded in making a loan for $8,000,000. They telegraphed at once to San Francisco, and this intelligence so alarmed the Bank party, that they called together all their colleagues in manipulating mines on the Comstock lode to raise a subscription of $200,000 in gold coin, ostensibly for the purpose of commencing legal proceedings against us, but really to be used for corrupt purposes in Congress. My friends in San Francisco informed me of this fact by telegraph, and on the 1st day of February, 1874, I addressed letters to all Senators and members of Congress, informing them of the fact of the existence of this corruption fund, and asked them to be on the lookout for underhanded legislation which I expected would be attempted at that session of Congress. I considered afterward that it would be safer for me to be there myself, and accordingly appeared in Washington on the 22d of February. I examined all the bills which had been introduced, and found one which had been introduced by my old enemy, Sargent, who had been elected to the United States Senate. This bill was called Senate Bill 16, and was evidently intended to allow those mining companies on the Comstock Lode that had not taken out their patents, as yet, to escape doing so, by making all proceedings for patents had by them null and void. By the Sutro Tunnel Act of 1866, each mining company on the Comstock lode was compelled to take its patent, subject to the provisions of that Act, which had to be distinctly set forth in each patent.

"After I discovered the true meaning of that bill which had already passed the Senate and the House Committee on Mines and Mining, I concluded to say nothing until the day the bill would be reached in the House. I then made some of my friends in that body acquainted with its true character, and an amendment was offered thereto by the Hon. William Holman, of Indiana, to the effect that nothing in the bill should affect our rights. But this, by itself, was not altogether satisfactory; after all the attempts which had been made for so many years to rob us of our vested rights, I considered that Congress was in justice bound to protect us by compelling the parties who were working these mines (the same being a portion of the public domain for which they did not have the shadow of a title) to take out their patents under their original applications. In consequence, the Hon. James S. Negley, of Pennsylvania, offered another amendment requiring parties on the Comstock lode who had not yet taken out their patents to do so within six months, in default of which they would forfeit their rights. This simple provision could not possibly have worked hardship to any one, for it would mainly have affected the Belcher and the Crown Point mining companies—the richest companies on the lode—and would have forced them to take government title and pay the paltry sum of $5 per acre for their mines, amounting in the aggregate to $200 each, which they refuse to pay to the government.

"Though the Bank exerted all its powers in the most unscrupulous manner to defeat it, yet so apparent was the justice of the Negley amendment that it passed the House by an overwhelming majority. But nine members could be found to vote against its passage, among them Charles W. Kendall, the only representative from Nevada. Senate Bill No. 16, with both the amendments of Holman and Negley, went over to the Senate, where it was referred to the Committee on Mines and Mining.

"In the mean time consultations of the Bank party, which was much frightened, were held from day to day, and, not being sure of the Mining Committee, they managed, by some means unexplained, to get Senator Chandler, of Michigan, to resign, while Senator Jones, of Nevada, a large owner in the Crown Point mine, was placed in his stead on that committee. When the day was set for the argument of the case, I went before it, together with the Hon. Jeremiah S. Black, of Pennsylvania, who had been retained as our counsel, and I asked permission to put a few questions to some of the members of that committee. My request having been granted, I showed clearly that Senator Jones owned large interests antagonistical to us, and that he was the bitter enemy of the Sutro Tunnel. Turning next to Senator Sargent, I asked him whether he was opposed to our work. He said that he considered our undertaking a great iniquity. I now declared I did not wish to question him any further, and, turning to the Chairman of the Committee, respectfully submitted my request that this bill should be referred to some other committee, where none of the members had any interest in the subject matter, and where I would be sure to get a fair hearing. We outsiders then retired, and after (as it was rumored) a very stormy debate, the majority of the committee concluded to recommend that the bill be referred to the Judiciary Committee of the Senate. This committee, consisting of some of the ablest lawyers of the Senate, after a most careful examination of all the questions involved, which lasted over a month, came to the conclusion *that Congress had no power to interfere with our vested rights;* and that if any controversy in regard to the Sutro Tunnel Act of 1866 should arise, it should be left to the judicial tribunals, and for that reason recommended that Sargent's Senate Bill (No. 16) and the amendments be indefinitely postponed.

"That action practically ended the controversy in Congress. The Bank party, who, in 1870, declared, through their agents on the floor of the House of Representatives, that they could not go to law, for the Act of 1866 was so plain that they would at once be thrown out of the Courts, and that therefore it was necessary for Congress to intercede in their behalf by legislation, now received but cool comfort from the unanimous decision of the Judiciary Committee, that the only remedy at their command would be to institute legal proceedings, if they had any grievances."

PROGRESS OF THE WORK.

Since the delivery of the speech from which we have made these extracts, and which, it should be stated, was made during a heated political campaign, the work on the tunnel has gone bravely on, and has been pushed forward day and night with the greatest energy.

The tunnel itself commences at the town of Sutro, laid out at the entrance of the tunnel upon the land purchased from the United States, in the valley of Carson River, about 3½ miles below Dayton, and 1½ miles from the river. It enters the mountains at an elevation of about 150 feet above the river bed, and has a course nearly W.N.W., reaching the Comstock lode about in the center of the Savage ground. The grade of the tunnel is three inches in 100 feet.

Work upon the tunnel was begun on the 19th of October, 1869; but as only about fifteen men were employed at first, it progressed slowly, not over 460 feet having been made up to January 1st, 1870. During the latter year Mr. Sutro was at times actively superintending the work, and at other times employed in increasing subscriptions to the enterprise, the work accomplished that year being 1290 feet. In the winter of 1870–71, on the petition of Mr. Sutro, Congress authorized the appointment of a commission to make inquiry into the cost and utility of the work, and report upon the same. The President appointed on this commission Major-General H. G. Wright, Major-General J. G. Foster, and Professor W. Newcomb. In the summer of 1871, these commissioners visited und examined the tunnel and the mines of the Comstock lode. Their report, though not so complete as was expected, was yet a valuable document. They found the proposed work to be entirely feasible, estimated the cost at $4,500,000, and the time necessary to complete it at three or four years —less, if machinery were employed; giving it as their opinion that the Comstock lode was a true fissure vein, extending down into the earth indefinitely.

They added that the mines could be worked as deep as mechanical means would allow, and that the amount of low-grade ore in the lode which can not be advantageously worked on account of the expense, is of unlimited extent.

In the fall of 1871, Mr. Sutro was successful in making such financial arrangements abroad as enabled him to prosecute the work more rapidly than he had before been able to do. The working force was increased, machinery was purchased, and active operations begun on a more thorough and extensive plan. Four vertical shafts were located along the tunnel line in November of that year.

Shaft No. 1 is located 4915 feet from the mouth of the tunnel, its depth to the tunnel grade being 522 feet. The work of sinking was commenced here (as on all the shafts) early in January, 1872, the tunnel level having been reached in this shaft on the 1st of July, 1873. Drifts east and west were started from the bottom of this shaft, the former having been extended and in good time connected with the tunnel header. Water had been more or less troublesome in this shaft, and work on it had been suspended for two months, preparatory to completion of pumps and excavation of pump-stations. The pumps used in this shaft and in shaft No. 2 were Allison & Bannan's double-acting cataract steam-pumps, which were quite extensively used in Pennsylvania and even in England, but none had yet been tried in Nevada. They were considered simpler, cheaper, and less liable to get out of order than the Cornish pumps. They weighed ten tons each; their steam-cylinders were 20 by 72 inches, and their discharge-pipes 10 inches; and they were capable of lifting the water from station to station, 300 feet apart. They were found to be very effective pumps, capable of dealing with any flow of water that could be encountered, and from No. 1 shaft the two pumps discharged over 3,000,000 gallons a month.

Shaft No. 2.—This shaft, shown in the accompanying illustrations, is located 9065 feet from the tunnel entrance, and its depth to the tunnel grade is 1041 feet. Begun at about the same time as Shaft No. 1, sinking was prosecuted without interruption till August 1st, 1872, when work was stopped to prepare for pump-stations and to place the pumps in position. The shaft had then been sunk 600 feet. Two pump-stations were excavated, the pumps put in place; the water soon lowered, and the work of sinking was again begun on the 4th of December, 1872. Sinking was again intermittent from the middle of March to the 9th of October, 1873, having reached at that time a depth of 734 feet. It then proceeded without interruption until the tunnel-level was reached, on the 18th of April, 1874. Drifting east and west was begun May 9th, 1874, and 171 feet were excavated in the east drift, and 170 feet in the west drift, when, on June 26th, a large and unexpected body of water was encountered in the west drift, which poured in with such force and in such volume that the miners were obliged to fly for their lives, and the shafts and drifts had to be abandoned. In less than a month not only the drifts but the shafts were filled with water to the top. Such was the end of Shaft No. 2, though not of the water which was encountered in the tunnel later, and which will be referred to there.

Shaft No. 3 is located 13,545 feet from the tunnel-entrance, and its depth to the tunnel-level is 1361 feet. This shaft was abandoned when completed to a depth of 456 feet, on account of the constant influx of water, which could not be overcome, except at an immense cost and after a long period of time, when it was probable that the tunnel itself would have passed beyond it.

Shaft No. 4 is 17,695 feet from the entrance, with a depth of 1485 feet. This shaft was also abandoned for the same causes as in the case of Shaft No. 3, when a depth of 674 feet had been attained.

In addition to these four shafts, a small air-shaft, 211 feet in depth, had been sunk, 2250 feet from the mouth. This air-shaft was begun May 27th, 1872, and completed the 12th of July following.

RATE OF PROGRESS.

It will now be necessary to return to the history of the tunnel. In the year 1871 the progress made was 915 feet, an average per month of 76¼ feet, and the total length of the tunnel at the close of the year was 2665 feet.

In 1872, the advance was from 2665 to 3480 feet, a total of 815 feet, and an average monthly progress of 67½ feet.

In 1873, the tunnel advanced to 5399 feet, a total of 1919 feet. This includes the 655 feet which had been made in the east and west drifts from Shaft No. 1, connection with which was made by the tunnel header October 27th of this year. Exclusive of these 655 feet, there was an average monthly progress of 105$\frac{4}{12}$ feet.

In 1874, the progress began to improve, owing to the introduction of the Burleigh drill. One of these drills was started April 25th; on June 22d three additional drills were put in, and on August 7th two more—making six in all. These drills were run by compressed air, supplied by a powerful compressor located at Shaft No. 1. This compressor was manufactured by the Société John Cockrill, of Seraing, Belgium, and was purchased there by Mr. Sutro, who preferred the heavier European machinery to the American, which is smaller and lighter, and consequently more liable to repairs and breakage than the other. This compressor ran with great smoothness and regularity, and with scarcely a single stoppage for repairs. The progress made during this year was 2680 feet, or an average per month of 223$\frac{4}{12}$ feet, bringing the header to a point 8079 feet from the mouth. The greatest progress ever made in a single month was made in December of this year—the extraordinary run of 417 feet, nearly 13 feet a day.

During the year 1875, the average progress per month was 310$\frac{8}{12}$ feet, the total distance run 3728 feet, and the total length of tunnel at the end of the year was 11,807 feet. One of the most interesting incidents of the year, and one not unaccompanied by danger, was the tapping of the enormous body of water which has already been mentioned as having burst into the west drift from Shaft No. 2. This water now filled a chamber 341 feet long, 8 feet by 12 in dimensions, besides filling a shaft 5 feet by 10, and over 1000 feet high. On the 9th of March a hole 100 feet long was bored by diamond drill from the face of the tunnel header, to allow the water to discharge. Upon tapping the body of water, the stream burst forth with tremendous force. Fragments of timber, rock, and *débris* were soon forced into it, and the hole had to be bored again. Again the water burst out with such force as to shoot the steel drill out into the tunnel; but gradually the water lowered in the shaft, and in a week's time progress was resumed in the header. Some instances of extraordinary progress occurred during this year; as, for example, the run from July 22d to August 8th, 279 feet!—about 16½ feet per day for 17 days consecutively!

On the 13th of August of this year the compressor at Shaft No. 1 was closed down, and the power has been ever since that date supplied from a very powerful compressor built at Kalk, near Deutz, on the Rhine, by the Humboldt Machine Company, and located at Shaft No. 2. This compressor is a powerful double compressor, and has given great satisfaction.

In the year 1876, the tunnel advanced from 11,807 to 15,477 feet, a total progress of 3670 feet, and an average per month of 305$\frac{10}{12}$ feet.

At the close of 1877, the total distance made was 18,607 feet, the progress for the year 3130 feet, and the average per month 260$\frac{10}{12}$ feet. This decline in the rate of progress was due to the exceedingly difficult character of the ground encountered. Soft, slippery and swelling, it was not only exceedingly difficult to pass through, but was also dangerous to work. In many places the clay, after being cut through and exposed to the air, swelled so as to displace the railroad track and to break the stoutest timbers like reeds. The most constant watchfulness was required to prevent accidents. Timbers were replaced again and again, and a gang of men kept continually at work easing up the clay behind them, and driving in lagging to give them additional strength. The tunnel was timbered up to the face itself, and frequently lagging was driven ahead of the drift to prevent accidents. Consequently very light blasts had to be used; sometimes even no powder could be fired, for fear of knocking down the timbers. Considering the character of the ground encountered, the average progress must be considered remarkably good. Two drills were also taken off in April, and the work was continued with only four drills for the rest of the year.

1878.—The progress during the present year has been of a lower average still than that of last year, or 235¼ feet per month to September 1st, with the same difficulties to encounter as those of the previous year, and the additional inconveniences of heat and bad air, which became very oppressive. Up to the present writing (September 1st) the total length of the tunnel is 20,489 feet, which brings it very close to the west wall of the Comstock lode, the syenite of Mount Davidson, and at this point work on the main tunnel has been discontinued.

On the 8th of July, about half-past 10 at night, a connection was made with the east drift, on the 1640-foot level of the Savage mine, at a point 20,018 feet from the mouth of the tunnel. The draught of air was immediate, rushing in from the tunnel mouth and upward through the Savage shaft with great force. Since the exhaustion of the great body of heated and poisoned air which had been pent up in the tunnel and in the lower drifts of the Savage mine for so many years, the air has cooled, and has ventilated and purified these underground workings in a very satisfactory manner. It is stated that the thermometer on the 2000-foot level of the Savage mine, which had previously stood at 120°, now rises to only 90°. Thus the first benefit from the tunnel project is already realized, though as yet only just begun. An immediate result of the improvement in the air of the tunnel header was seen in the increased progress which was made immediately subsequent to the connection.

DETAILS OF THE WORK.

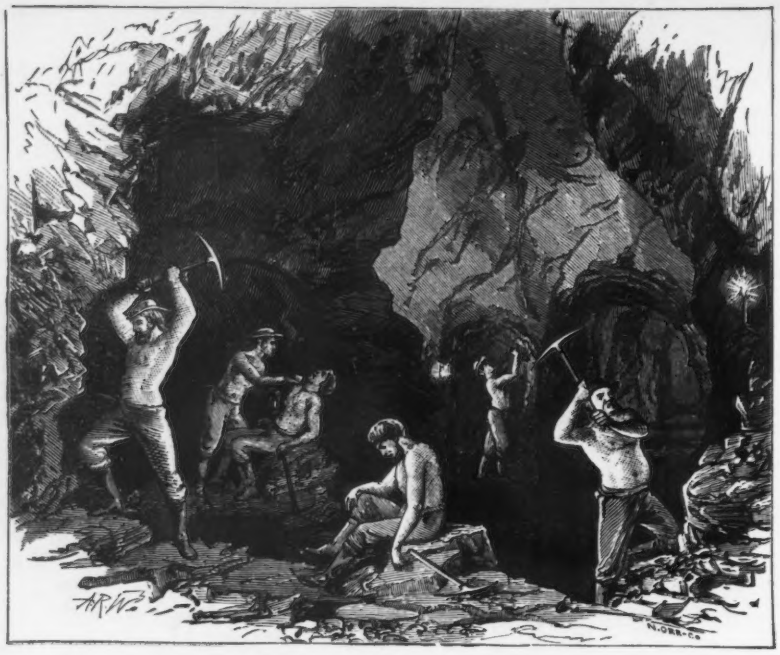
A few details of the work may prove interesting. The average progress has been given year by year since the beginning of the work, but in the early years details of work accomplished were not kept, apparently, as fully as would have been desirable. But in 1875 Mr. Sutro arranged an outline form of reports, which has been in use ever since then, giving all the important details of the work, and from them we compile a *résumé* which can be conveniently followed in the tables on page 387.

This table of details is the more valuable in that it is brought up to the close of the work on the main tunnel.

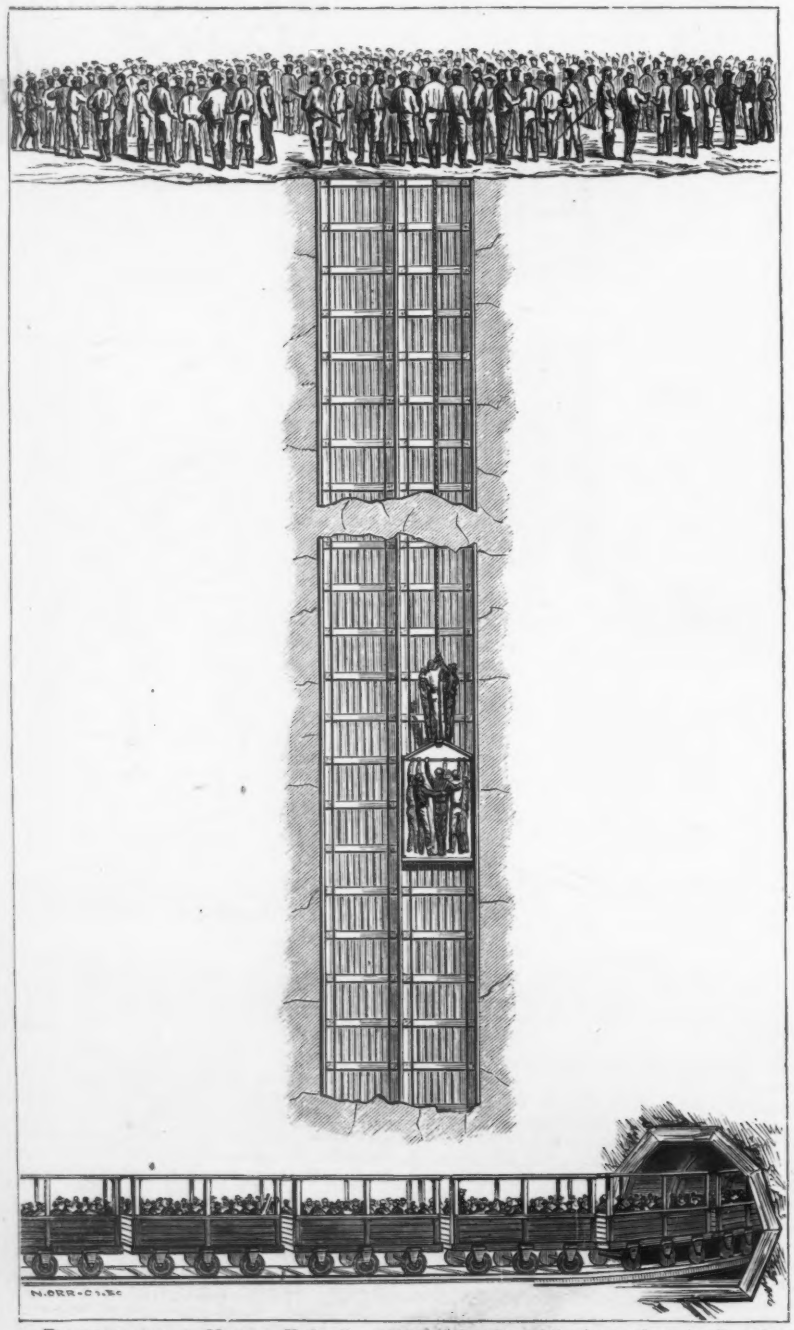
The first thing to be considered after ventilation is drainage; and in order to receive the water of the Comstock lode through the tunnel, it will be necessary to excavate and build a covered drain along its whole length. The water in some of the mines now stands at a temperature of 150 to 160 degrees, and if the water were allowed to flow through the tunnel, the strong current of air passing over it, life would be endangered from the steam thus generated. No work could be done under these circumstances. The drain can be commenced, however, at an infinite number of places, and in that way quickly completed. It will be a permanent part of the tunnel, and will consequently be substantially built.

The adjacent mines are already beginning to look anxiously forward for the completion of this great work. Its advantages and benefits are quickly appreciated now that they are close at hand.

The Julia Company has recently entered into a contract with the Sutro Tunnel Company, looking to the speedy construction of a branch from the main tunnel to the shaft of their mine. This connection, which is exactly in accordance with the original scheme of the projector, will save to the Julia Company the cost of heavy and expensive pumping and hoisting works, besides thoroughly cross-cutting their ground in the direction from which it comes. The surveys for this branch have been made, and the work upon it was actually begun on September 1st. Its initial point is distant 19,716 feet from the mouth. The distance to be run to connect

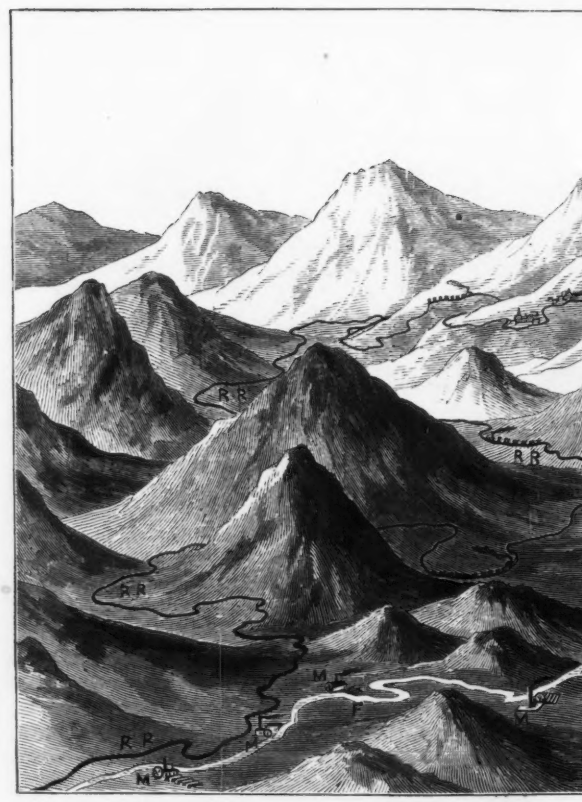


MINERS FAINTING FROM HEAT.

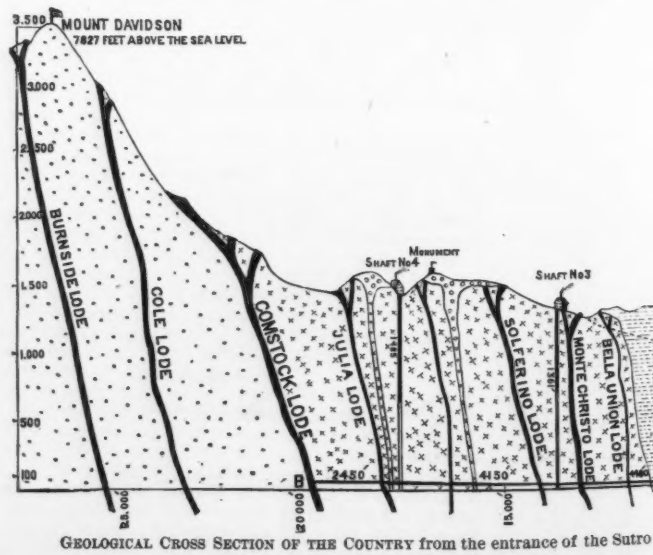


TRANSPORTATION OF MINERS.—Under the present system the 3,000 miners who enter the mines daily are lowered, a dozen at a time, on cages, consuming hours of time; after the completion of the Sutro Tunnel a shift of one thousand men can be put in on a train of cars and landed at the bottom of the shafts in fifteen minutes.

VIEW OF MOUNT RO

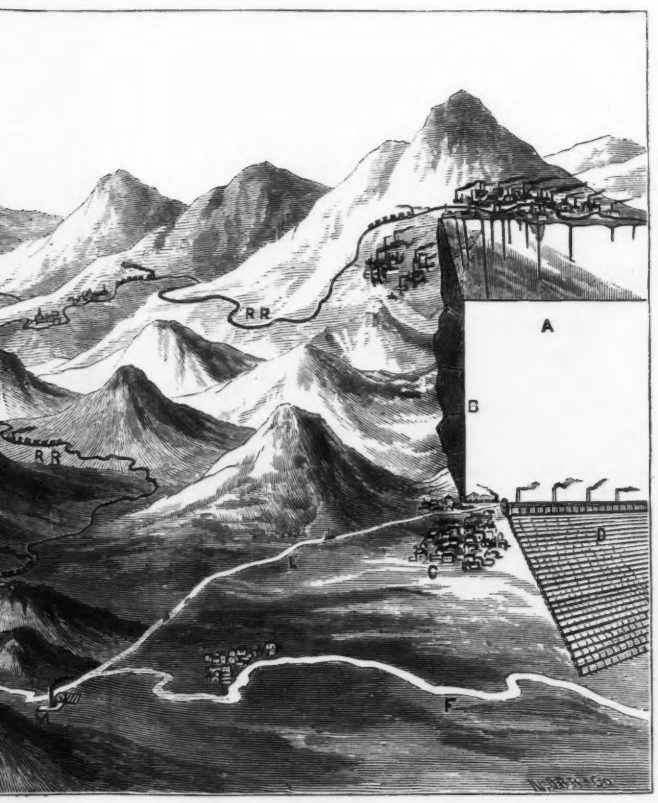


CROOKED RAILROAD.—Virginia or Truckee Railroad, R R, from Virgi exposing to view the northern portion of the Comstock Lode, A, the lin hoisted to the surface at Virginia City, and transported over this road to th can be delivered in the mills, D, at the town of Sutro, at one-fourth the pri

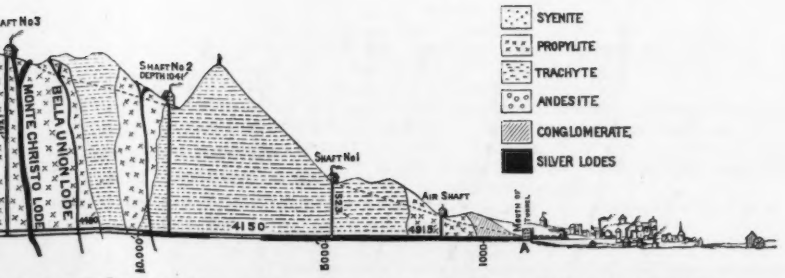


GEOLOGICAL CROSS SECTION OF THE COUNTRY from the entrance of the Sutro

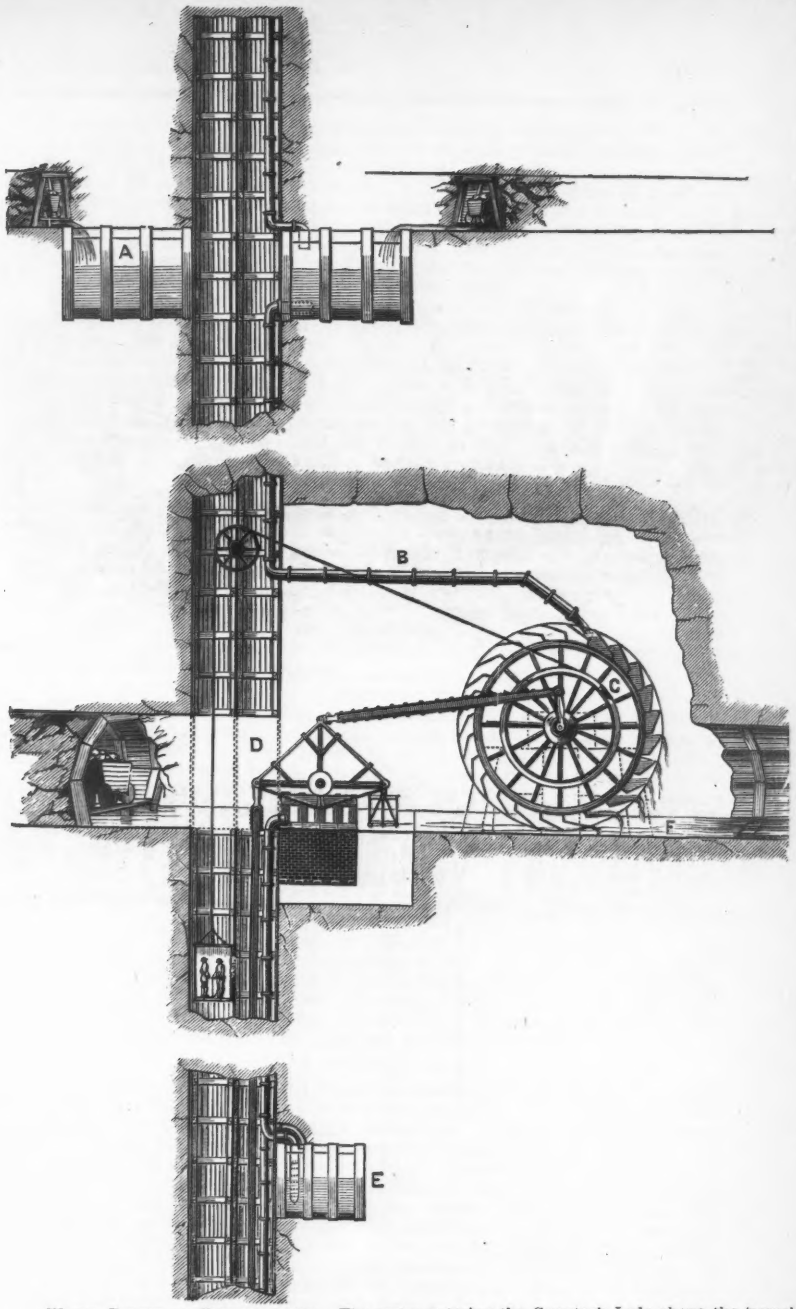
OF MOUNT ROSE AND OF SHAFT No. 1.



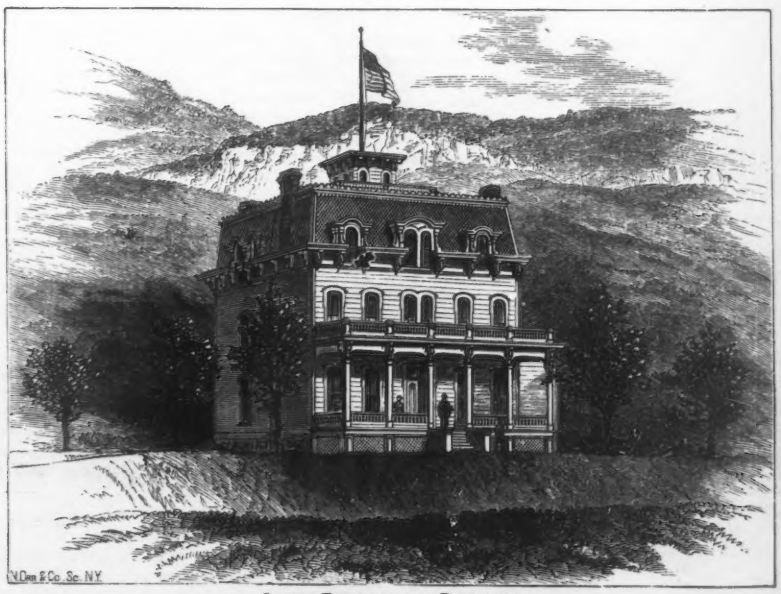
R, from Virginia City to Carson City, F. with a section of the mountains removed
de, A, the line of the Sutro Tunnel, B, and also the mills at Sutro, D. The ore is now
this road to the mills on Carson River, M. After the completion of the Sutro Tunnel, it
fourth the price it now costs to hoist it.



e of the Sutro Tunnel to and beyond the Comstock Lode; also the four shafts on the tunnel line.



WATER POWER AT TUNNEL LEVEL. The water entering the Comstock Lode above the tunnel level may be utilized as a motive power by collecting it in tanks, as shown at A, (say 1,000 feet above the tunnel) from which it may be conducted through pipes B, to water-wheels C, at the tunnel level, the water being discharged in the tunnel at F. These wheels may be employed to pump water, or for the purpose of hoisting or lowering men, material, etc., from *below* the tunnel level.



OFFICE BUILDING AND DWELLING.

tract of land two thousand feet on each side of the tunnel, for a length of seven (7) miles, which may be discovered in constructing the tunnel or its branches. The value of such a grant, in the center of this bonanza country, it is impossible to estimate. The California and Virginia Consolidated mines alone (part of the latter lying within the Sutro Tunnel Company's grant) have yielded $100,000,000.

LAND.

The company owns a tract of 5000 acres of land adjacent to the tunnel entrance. Upon it the town of Sutro is building up; which, after active operations are commenced, will grow into considerable proportions. Much of the land has great agricultural value, the tunnel water and that from Carson River being used for irrigation. Fine crops of alfalfa are here grown, and an acre yields from 6 to 8 tons, worth $20 per ton. The cost of production, after the land is once put in proper order, is not over $20 per acre per annum.

RAILROAD.

A connection will be made with the Julia shaft about February 1st next, the branch being now in 653 feet from the main tunnel, forming the completing link for a railroad from Carson River to Virginia City, which will be in full operation as soon as the drain and a double railroad track in the tunnel are completed. At a future day a branch railroad from the town of Sutro, 38 miles in length, over an almost level country, will form a connection with the Central Pacific Railroad at Wadsworth, and give direct communication with San Francisco and the East.

IMPROVEMENTS.

The company has expended large sums in improvements. It owns machine-shops, steam-engines, air-compressors, power-drills, hoisting works, rolling stock, warehouses, assay office, carpenter and blacksmith shops, water-works, extensive stables, 120 mules and horses, freight wagons, agricultural implements, and numerous buildings about the town of Sutro and on the farms. The business of the company is carried on in two offices; one at San Francisco and the other at the works.

The most complete system of bookkeeping, vouchers, and checks has been introduced, and experienced men are at the head of each department, the whole being under the general direction of Mr. Sutro, who is daily informed of every detail, whether he be at home or abroad.

MINING NOTES FROM THE NORTH SHORE OF LAKE SUPERIOR.

Special Correspondence of the Engineering and Mining Journal.

The close of navigation comes this year with far brighter prospects for the future successful development of the mining interest of this shore than has been the case for many a year.

During the summer (as many newspaper items have testified), Silver Islet sprang suddenly from its feeble, tottering decline into bewildering productiveness of unheard-of mineral riches. Although the total yield of Silver Islet, counting, as it does, above its third million, is small when compared with the big bonanza mines of the Comstock, yet, for the wonderful richness of its ores, it surpasses them all. The new bonanza, in this particular, surpasses any previous yield of the mine.

During the spring, it may be remembered, I noted a strike of a small pocket of about $3000 on the third level, to the south of former work, at about 165 feet from the surface. Exploration of this part of the mine was pushed forward, which resulted in the discovery of a new ore chute, extending at least to the fifth level. The upper part of this bonanza has yielded since July some $500,000, and promises as much more from the ground already opened, with possibilities more or less doubtful of much larger sums from the extension of the chute into unexplored ground below the fifth level, and extending southward.

Besides the rich ore, a large amount of stamp-rock has been developed at this point, and in other parts of the mine—a year's supply without drawing on the possibilities. The importance of this stamp-rock is seen when the yield of the mill is taken into consideration. During the summer, the weekly yield has been from $10,000 to $15,000, 50 head of stamps crushing some 60 tons of rock per day. As the total mining expenses for the force they have at work can hardly be above $11,000 per month, the profit from the mill alone would insure a large amount of exploration after the present bonanza is worked out.

The yield of the mine has been from $40,000 to $95,000 per week, including the yield of the mill. The richness of the ore has been increasing as depth has been gained, and has run from $2000 to $25,000 per ton. The ore of the latter class has not been obtained simply in hand specimens, but by the ton, and $10,000 ore by the tens of tons. All the ore is mixed with cobalt and nickel as arsenides or black oxide, usually in minute quantity; but some of the richest masses of native silver carry considerable percentage of cobalt mostly, so that unless polished it fails to show its true character, but appears like masses of black stone.

There are also masses of pure white wire silver, or rather rod-silver, as the thickness is beyond wires.

Another curious feature is, that the black masses in places become light through the loss of cobalt and are 850 fine; then taking on the appearance of cement silver as pressed into cakes for smelting. In places, this silver incloses perfect quartz crystals, like plums in cake, with no other gangue.

Vuggs are found filled with black dirt which is extremely rich in silver and oxide of cobalt.

Explorations are being vigorously pushed both in the mine and on the main shore. Also the diamond drill has been at work until cold weather prevented exploring a large vein on Shangoinah Island, one of the islands adjoining the Islet. Next season this work will be continued, as no great depth has been reached as yet.

On the main shore, the shaft has been sunk about 100 feet, and drifts off now some 60 feet on the vein, showing fine spar, some traces of silver, and encouraging indications for ultimate success.

To my mind, perhaps following too closely experience on the other side of the bay, this part of the vein seems to be in the barren dolomitic slates which are underlaid by a second silver-bearing rock at a depth there of 340 feet.

A fine Copeland engine has been put up at this shaft, so that there will be no difficulty in testing the vein in depth, which, I think, will bring success at this point also. Work is to be pushed at the bottom of the Islet mine nearly 700 feet from the surface, and the junction of the slate and diorite followed where diamond-drill holes have already given very favorable indications. Even should the present openings limit the extent of the bonanza, it is almost certain that others will be found following the same laws of deposit as the one now being worked.

During the fall, a complete underground survey has been made of Silver Islet by Mr. W. M. Courtis, Mining Engineer, of Wyandotte, to preserve the records of the past workings. "EZUEST."

(TO BE CONTINUED.)

GENERAL MINING NEWS.

CALIFORNIA.

THE BODIE DISTRICT.

From the mining summary in the *Standard* of the 20th inst. we condense the following:

"We seem to have entered upon a perfect tidal wave of rich discoveries during the week past. We have been shown specimens of gold-bearing rock which are perfectly fabulous in point of richness, and, in many cases, have personally visited and inspected the same. The Butler boys seem to lead the van in the discovery line; their last find being on Bodie Bluff, near the Con. Pacific. A narrow vein of pure white quartz was discovered eight feet from the surface, which assays in gold over $40,000 to the ton. The Bodie, Standard, Bulwer, University, Red Cloud, Con. Pacific, Bodie Tunnel, and many others report new and important developments.

"At no period of our mining history have the prospects looked so cheering as now, and all look forward with renewed hope and confidence to the passage of time which shall bring us before the world as the greatest gold-producing country ever discovered. The late smash in Comstocks, as reported during the past two days, will, of course, affect our local stocks for a time, but the reaction will certainly be in our favor when it sets in. No doubt can exist that all the surplus money now being circulated from hand to hand among the gamblers of Pine street, will soon seek new and more profitable channels, and Bodie District must reap the benefit. We have two dividend-paying mines now, and two others soon to join them, and, with these alone, we are satisfied nothing can stay our prosperous future."

NEW PATENTS.

The following is a list of the new inventions relating to Iron, Coal, Mining Machinery, Chemical Apparatus, and the treating of Precious Metals, etc., from *The Official Gazette of the United States Patent Office*, for the week ending October 22d:

No. of Patent.	*Title of Invention.*	*Name of Inventor.*	*Residence.*
209,103	Vitreous Lining for Pipe-Connections	Elijah H. Austin	New York, N. Y.
209,104	Main and Pipe	" " "	" "
209,105	Feed-Water Heater	William Baragwanath	Chicago, Ill.
209,114	Gas-Generating Furnace	Charles F. Dieterich	Baltimore, Md.
209,115	Switch for District-Telephone Systems	Thomas B. Doolittle	Bridgeport, Conn.
209,119	Flushing Slag from Blast-Furnaces	Henry C. Grittinger	Cornwall, Pa.
209,143	Water-Mill	Sylvester N. Stewart	Philadelphia, Pa.
209,159	Dredging-Machine	George W. Cummings	San Francisco, Cal.
209,171	Ore-Stamp	Zaccheus Lee Kay	San Diego, Cal.
209,186	Composition for Removing Incrustations from Steam-Boilers	F. J Obert, Jr	Reading, Pa.
209,215	Insulating Railroad Tracks	Louis Bastet	Brooklyn, N. Y.
209,219	Turbine Water-Wheel	John W. Bookwalter	Springfield, O.
209,220	Injector	Joseph E. Bott (a)	Nottingham, England.
209,226	Steam-Boiler Cleaner	Joseph Carter	Blyth, Canada.
209,227	Furnace-Feeder	William W. Chapin	Manistee, Mich.
209,228	" " "	" " "	" " "
209,236	Crane for Hoisting Car-Wheels	William M. Davis	Baltimore, Md.
209,240	Alloy to be used with other Alloys	Edmund A. C. Du Plaine	Philadelphia, Pa.
209,241	Quadruplex-Telegraph Repeater	Thomas A. Edison (b)	Newark, N. J.
209,255	Tripod-Head for Surveying-Instruments	William Gurley (c)	Troy, N. Y.
209,258	Oil-Well Pump	F. J. Hanna	Kane City, Pa.
209,263	Alloy for Coin	William W. Hubbell	Philadelphia, Pa.
209,266	Telephone-Transmitter	John H. Irwin	" "
209,269	Tappet for Stamp-Rods	Robert A. Johnson	" "
209,289	Speaking-Telephone	George M. Phelps	Brooklyn, N. Y.
209,305	Slide-Valve	Joseph Streily (d)	Vincennes, Ind.

(a) Assignor to Charles Odling, same place.
(b) " ½ right to George B. Prescott, same place.
(c) " to W. & L. E. Gurley, same place.
(d) " ½ right to John T. Young, same place.

PROPOSALS.

For the benefit of many of our readers, we compile weekly such proposals and solicitations for contracts, etc., as may be of interest. The table indicates the character of proposals wanted, with the full name and address of parties soliciting the same:

50,000 Cross-ties for Denver and Rio Grande R.R.; R. F. Weitbrec, Treas. D. and Rio G. R.R., Colorado Springs, Col. ..... During the Winter

Railway Construction and Working, 2000 miles; F. Braun, Sec'y Dept. of Public Works, Ottawa, Canada ..... Dec. 1

Establishing and Operating a Steam Ferry across the Missouri River from Sioux City to Covington, Neb.; L. B. Jackson, Mayor Sioux City, Nev. ..... " 2

Copper, 200,000 lbs.; W. W. Williams, Pay Inspector U. S. Navy, Washington, D. C ..... " 3

Wrought and Cast-Iron Work for U. S. Custom House, Chicago, Ill.; James G. Hill, Supt. Arch., Washington, D. C ..... " 3

Timber for Crib-Work at Harbor of Refuge, Sand Beach, Mich.; G. Weitzel, 26 Washington avenue, Detroit, Mich ..... " 4

Lighting Ironton, Ohio, with carboline; Halsey C. Burr, City Clerk, Ironton, O. " 6

Grading Central avenue, Westwood, O.; Robert A. Armstrong, Village Clerk .... " 9

Heating Apparatus; Geo. W. Wicks, Louisville, Ky ..... " 12

Constructing about 200 miles for the Northern Pacific Railroad, from the Missouri River to the Yellowstone; Charles B. Wright, President Board of Directors, 23 Fifth avenue, New York City ..... " 17

Railway Construction from the Province of Ontario to the Pacific Ocean, about 2000 miles; F. Braun, Secretary Dept. of Public Works, Ottawa, Canada .. Jan. 1, 1879

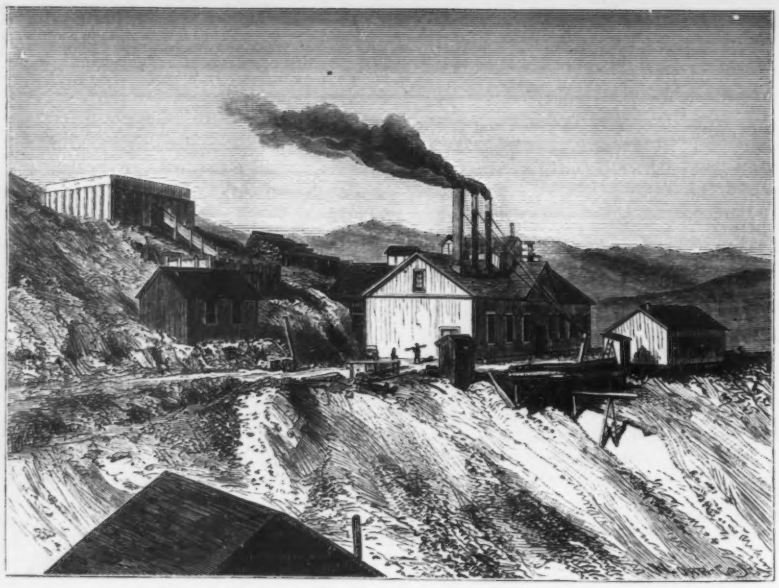
Railway Construction, 310 Miles; F. Braun, Secretary of Department of Public Works, Ottawa, Canada ..... "

Gas Illumination of Rio de Janeiro, Brazil; Salvador de Mendonca, Brazilian Consul-General, 42 Broadway, New York City ..... March, "

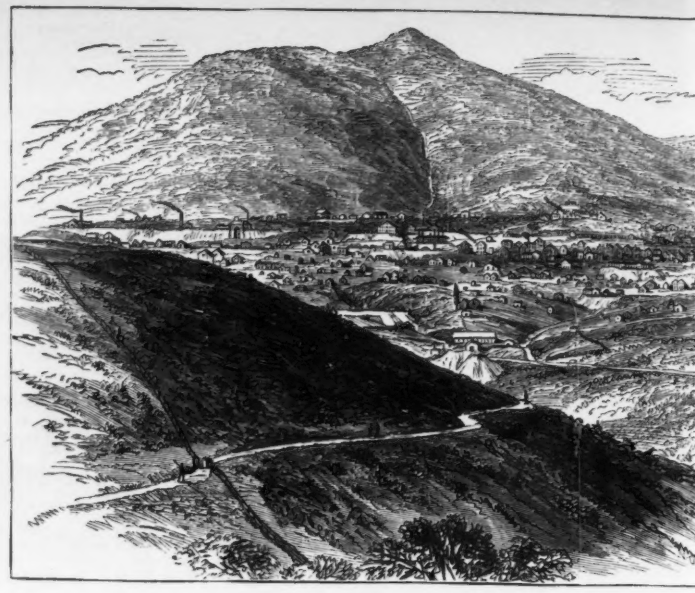
Locks and Keys for Mail Bags; D. M. Key, Postmaster General, Washington, D. C ..... March 20, "

Coal for Schools of Youngstown Board of Education, Youngstown, O ..... March 29, "

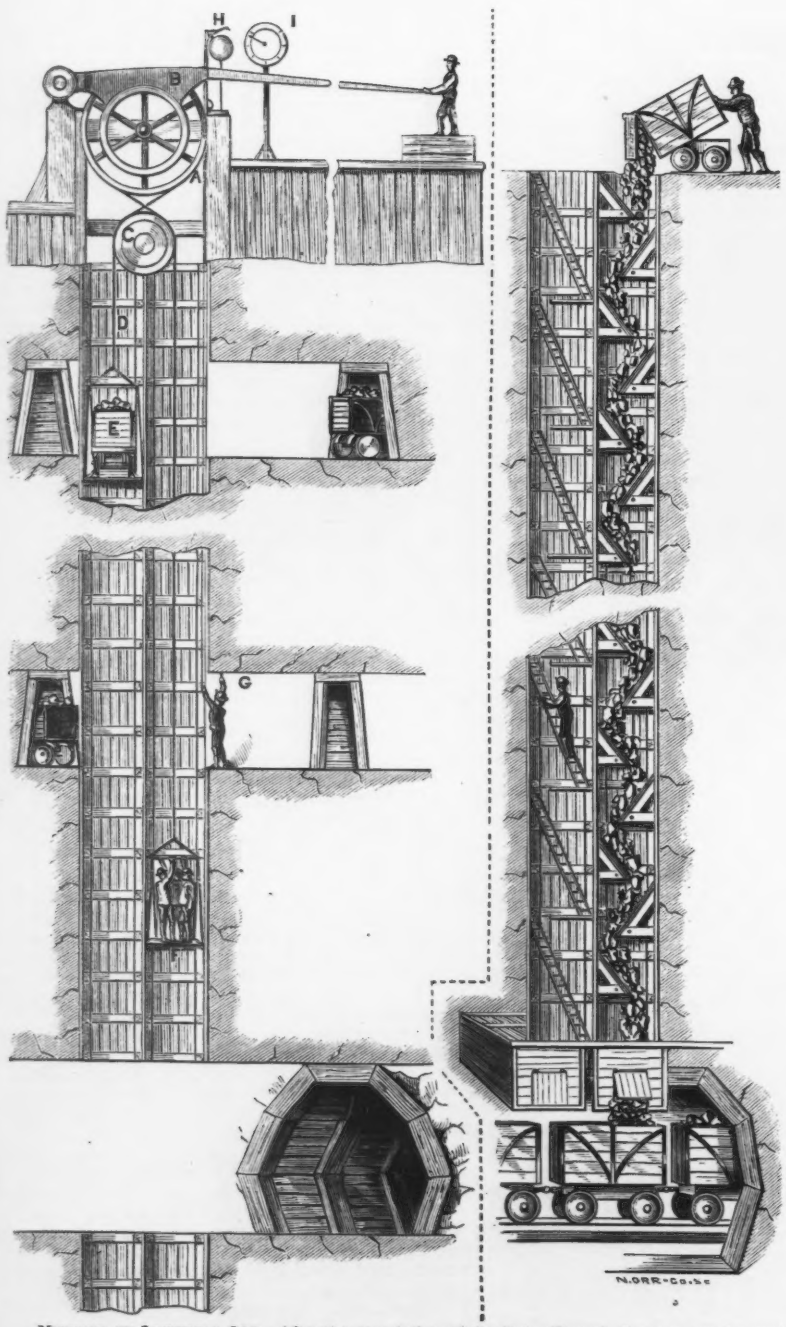
A GOOD OUTLOOK FOR BRIDGE-BUILDERS IN COSTA RICA.—The government of Costa Rica has advertised for tenders for building bridges on the second Atlantic Division of the railroad. One hundred and ninety-four bridges in all will be needed. The bridges will vary in length from 3 feet to 1044 feet, and will be built for a track of 3 feet 3⅜ inches gauge. They will be of sufficient strength to stand a strain of 2240 pounds to the lineal foot, in addition to the weight of the usual freight carried.



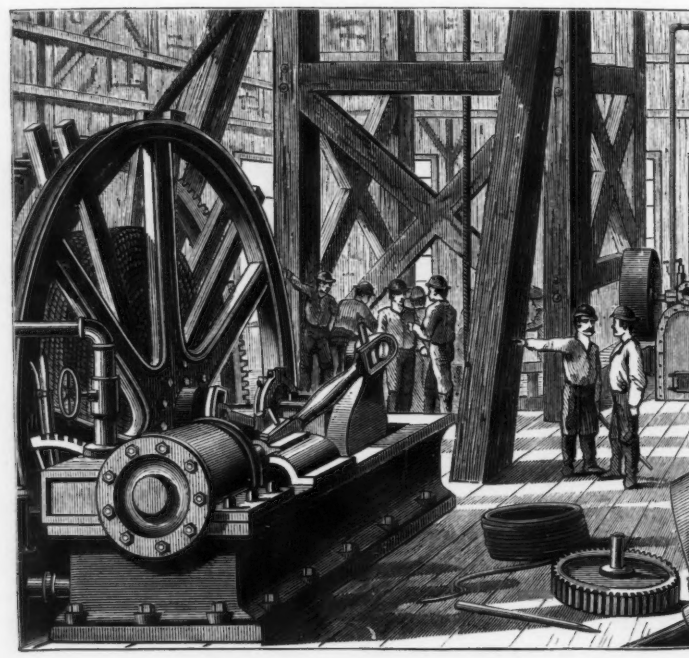
VIEW OF HOISTING WORKS AT SHAFT NO. 2, SUTRO TUNNEL.



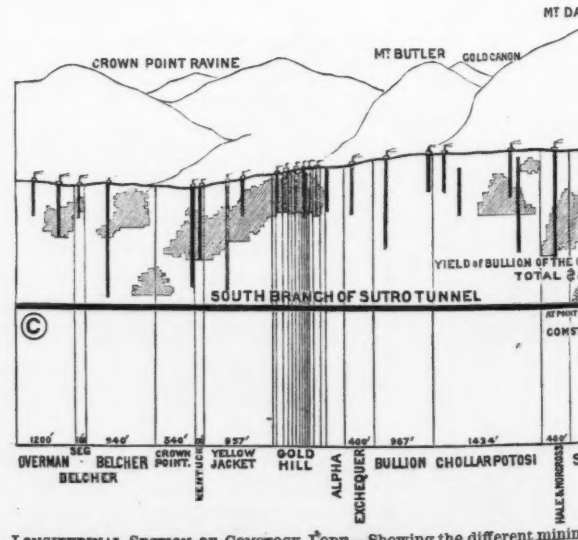
VIEW OF VIRGINIA CITY AND MT. DAVIDSON FROM SUTRO TUNNEL COMPANY'S ROAD.—M
3,600 feet above tunnel, and 7,827 feet above sea level.



METHODS OF LOWERING ORE. After the completion of the Sutro Tunnel, the ore may be sent down to the tunnel level into bins and cars by means of shutes as shown in the right hand illustration, or it may be lowered in cars, E, placed on a cage with rope, D, attached reaching to the *surface*, which is regulated with a brake, B, controlled by one man, as shown on the left hand. The ore lowered from above in one compartment may be made to hoist men or timbers to any level above in another compartment of the shaft, and also from below the tunnel to its level.



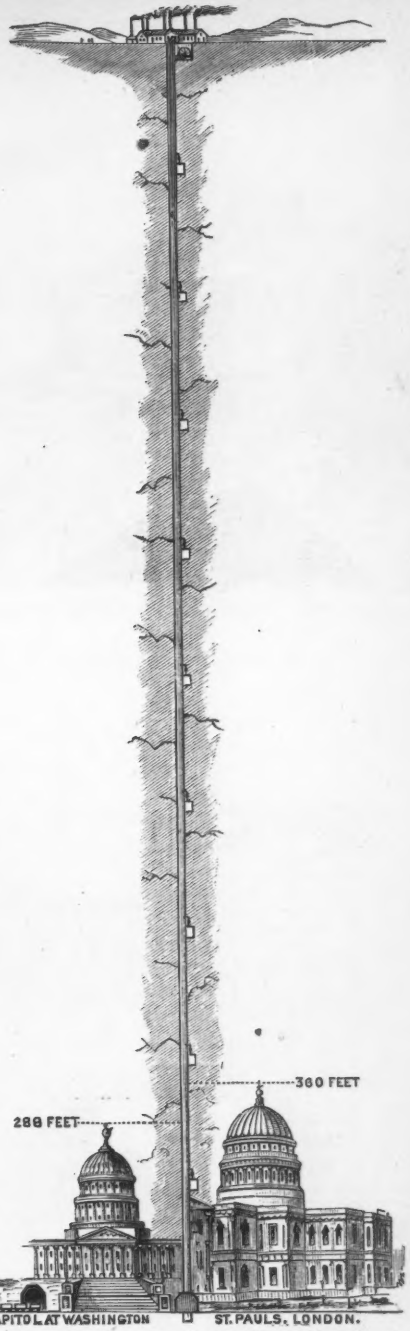
INTERIOR OF BUILDINGS AT SHAFT NO. 2, SUTRO TUNNEL.



LONGITUDINAL SECTION OF COMSTOCK LODE.—Showing the different minin
with the Lode at B, and the northerly and southerly branches fr

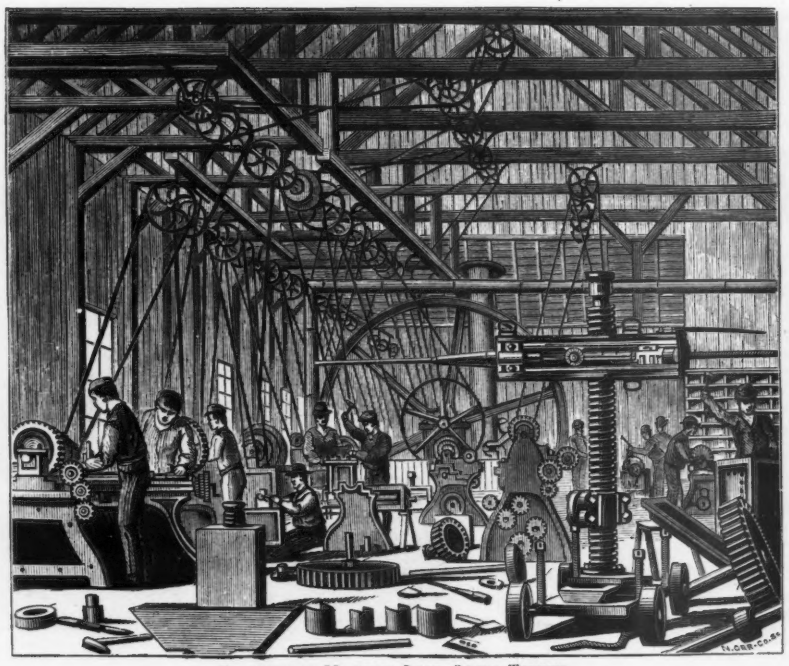
Y'S ROAD.—Mt. Davidson
l.

VIEW OF THE SUTRO TUNNEL FROM ITS ENTRANCE.
10 feet by 14 feet in the clear.

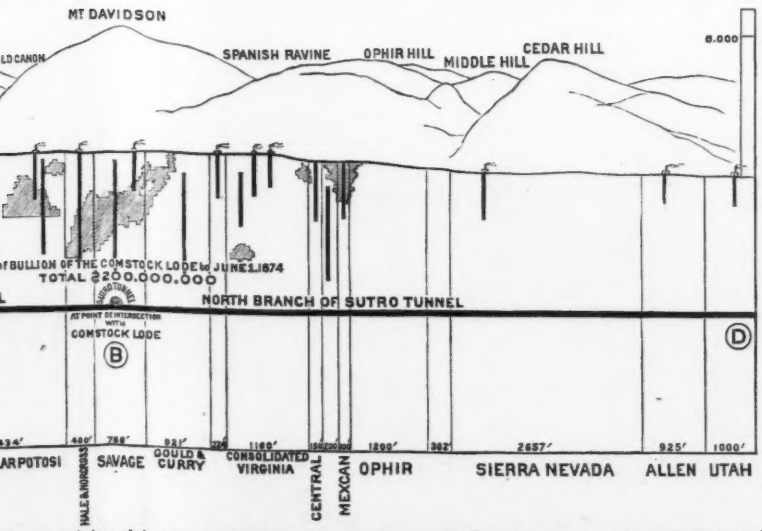


SHAFT ON THE COMSTOCK LODE. From the surface to the level of the Sutro Tunnel 2,000 feet in depth. The water, ore, and debris are, under the present system of mining, pumped or hoisted by means of powerful steam engines. The water must pass through ten pumps and tanks 200 feet apart before reaching the surface. The men enter and ascend from the mines through these shafts.

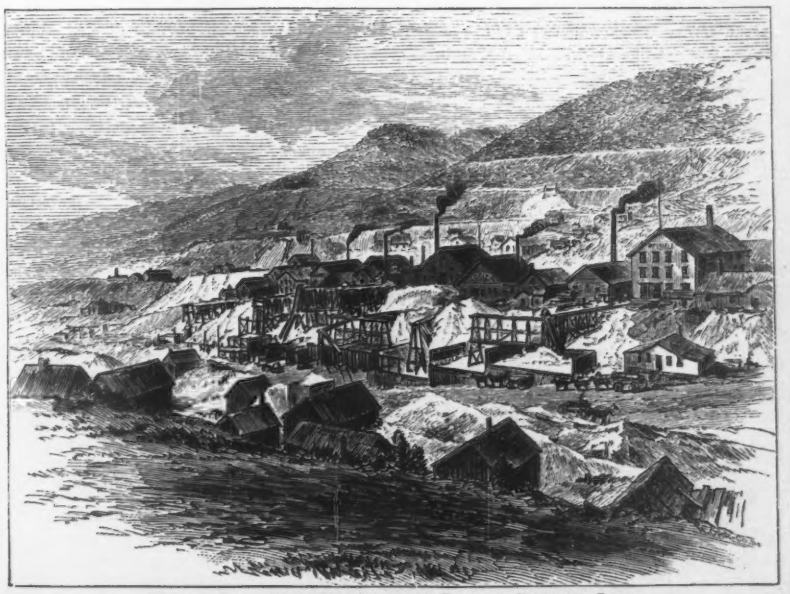
NNEL.



INTERIOR OF MACHINE SHOP, SUTRO TUNNEL.



ifferent mining claims located thereon, the ore bodies extracted, the intersection of the Sutro tunnel
y branches from the tunnel BD and BC, with which the different shafts will be connected.



VIEW OF GOLD HILL, THE SOUTHERN PART OF COMSTOCK LODE.

GENERAL LIBRARY University of MICHIGAN

STATISTICS OF COAL PRODUCTION.

This is the only Report published that gives full and accurate returns of the production of our Anthracite mines.

Comparative statement for the week ending Nov. 23d and years from January 1st:

Tons of 2240 lbs.	1878.		1877.	
	Week.	Year.	Week.	Year.
Wyoming Region.				
D. & H. Canal Co..	55,502	1,868,852	71,350	1,614,243
D. L. & W. RR. Co.	64,508	1,904,869	74,544	1,721,476
Penn. Coal Co.....	29,394	824,887	29,512	928,184
L. V. RR. Co.....	27,336	738,756	29,278	817,476
P. & N. Y. RR. Co..	1,021	29,646	1,594	40,144
C. RR. of N. J.....	26,449	859,938	45,352	1,178,591
Penn. Canal Co....	11,161	340,154	16,535	340,231
	215,371	6,567,102	268,165	6,640,345
Lehigh Region.				
L. V. RR. Co.....	66,859	2,173,651	66,070	3,022,470
C. RR. of N. J.....	45,301	1,207,800	36,881	1,353,876
D. H. & W. B. RR..	1,876	33,032	1,349	28,930
	114,036	3,414,483	104,300	4,405,276
Schuylkill Region.				
P. & R. RR. Co....	176,028	4,617,473	154,301	6,115,967
Shamokin & Lykens Val....	23,826	698,303	14,236	654,058
	199,854	5,315,776	168,537	6,770,025
Sullivan Region.				
Sul. & Erie RR. Co.	1,308	31,500	942	18,411
Total	530,569	15,328,861	541,944	17,834,057
Increase.....	.....	.....	.....	.....
Decrease	11,375	2,505,196	.....	.....

The above table does not include the amount of coal consumed and sold at the mines, which is about five per cent of the whole production.

Shipments of Anthracite Coal during week ending November 16th, 1878, and total for year to date, compared with corresponding time last year, as prepared by Mr. John H. Jones, Accountant of the Anthracite Board of Control.

Interests.	Week.		Total for year to date.	
	Tons.	Cwt.	Tons.	Cwt.
Philadelphia & Reading R.R.	171,838	19	4,418,845	1
Lehigh Valley R.R.....	95,906	5	2,965,590	3
Central R.R. of N. J.....	65,668	6	1,886,956	18
Del., Lack. & West. R.R....	56,818	18	1,847,664	13
Del. & Hudson Canal	49,163	14	1,733,324	10
Pennsylvania R.R	38,213	15	1,168,223	14
Pennsylvania Coal Co.....	30,037	17	842,414	18
Total.....	507,647	14	14,863,019	17

Interests.	Corresponding time last year.		Difference.	
	Tons.	Cwt.	Tons.	Cwt.
Phila. & Reading R.R..	5,950,188	2	D. 1,531,343	7
Lehigh Valley R.R.....	3,919,418	19	D. 953,828	16
Central R.R. of N. J....	2,339,985	4	D. 453,028	6
Del., Lack. & West. R.R	1,803,154	14	I. 44,509	19
Del. & Hudson Canal....	1,645,252	0	I. 89,072	10
Pennsylvania R.R.....	1,350,243	0	D. 182,019	6
Pennsylvania Coal Co...	940,157	0	D. 97,742	2
Total.....	17,947,398	19	D. 3,084,379	2

Note.—The tonnage for the week on this statement is approximated from the weekly returns of the transportation companies, and is subject to adjustment each month to conform to the returns made by each interest to the Board of Control.

Belvidere Delaware Railroad Report for week ending Nov. 23d:

	Week.	Year. 1878.	Year. 1877.
Coal for shipment at Coal Port (Trenton).....	393	13,228	50,422
Coal for shipment at South Amboy	13,405	388,728	488,253
Coal for distribution.....	6,851	172,621	175,193
Coal for Company's use.....	1,752	75,892	64,720

Coals Cleared on the Canals of the State of New York for the week ending Nov. 14th, and year from the opening of navigation:

Tons of 2000 lbs.	1878.		1877.	
	Week.	Year.	Week.	Year.
Anthracite	20,125	580,937	27,599	956,449
Bituminous.....	8,804	183,402	4,378	254,127
Total amount cleared	28,929	764,339	31,977	1,210,576

The increase of shipments of Cumberland Coal over the Cumberland Branch, and Cumberland and Pennsylvania railroads amounts to 94,031 tons, as compared with the corresponding period in 1877.

Receipts and shipments of coal at Chicago Ill., for the week ending Nov. 23d, and year from January 1st:

	Week. Tons.	Year. Tons.
Receipts.....	49,910	1,619,359
Shipments.....	8,400	259,265
Perth Amboy Business:		Tons.
Received for the week		22,551
Shipped for the week.....		21,995
On hand Nov. 23d.....		54,580

The Production of Bituminous Coal for the week ending Nov. 23d was as follows:

Tons of 2000 lbs., unless otherwise designated.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2,240 lb.....	43,622	1,533,141
Barclay Region, Pa.		
Barclay R. R., tons of 2,240 lbs.....	5,815	276,253
Broad Top Region, Pa.		
Huntingdon and Broad Top R. R.....	3,269	136,241
*East Broad Top.....	1,758	55,123
Clearfield Region, Pa.		
*Snow Shoe.....	1,076	23,823
*Tyrone and Clearfield.....	23,837	1,109,663
Allegheny Region, Pa.		
*Pennsylvania R. R	4,448	178,687
Pittsburg Region, Pa.		
*West Penn R. R.....	3,131	160,684
*Southwest Penn. R. R.....	381	22,310
*Penn & Westmoreland gas coal, Pa. R. R..... 17,528		583,382
*Pennsylvania R. R..... 10,262		381,523

*For the week ending Nov. 14th.

The Production of Coke for the week ending Nov. 14th:

Tons of 2000 lbs.	Week.	Year.
West Penn R. R.....	1,781	75,853
Southwest Penn. R. R.....17,525		682,846
Penn. & Westmoreland Region, Pa. R. R.	2,022	66,306
Pittsburg, Penn. R. R.....	2,518	101,303
Penn. R. R. (Allegheny Region).....	....	12
Total... ... .23,846		926,323

COAL TRADE REVIEW.

New York, Friday Evening, Nov. 29, 1878.

Anthracite.

On Tuesday the Scranton sale took place, according to the previous announcement, and the result has been very demoralizing to the trade. We are informed upon good authority that previous to the sale it was understood that prices were to be left to take care of themselves, but that upon the morning of the sale, a range so low was indicated that the old forces were called together with the result of assisting matters to a very great extent, say 25c. to 50c. per ton. The following quantities of coal were sold, and average prices received, comparison being made with the previous sale:

Tons.	Average prices Oct. 30th.	Average prices Nov. 26th.
5,000 steamer.....	$3.46	$3.20
15,000 broken....	3.57½	3.23
10,000 egg.....	3.67½	3.23¾
35,000 stove	4.05	3.71
10,000 chestnut	3.32½	3.07
75,000 General average.....	$3.74	$3.43

The result of the above prices has been to leave the regular market without a price and with but very little demand.

Upon the same day the Pennsylvania Coal Co. issued a circular quoting f. o. b., Weehawken, during December:

Steamer.....	$3.30	Stove.....	$3.85
Grate.....	3.30	Chestnut....	3.40
Egg.....	3.30	Small chestnut.....	2.30

But to wholesale dealers it has been giving an allowance of at least 20 cents per ton from these prices, thereby making them, as has been the case after several of the late auction sales, even lower than the average prices marked up at the sales.

On the same day the Lehigh operators met at Bethlehem, and at a harmonious meeting, whereat, however, neither the Lehigh Valley Railroad Company nor the Lehigh Valley Coal Company was represented, it was

Resolved, That the allotment for 1878 not being satisfactory to the Lehigh Valley interests, the present arrangement ceases December 31st, 1878.

Resolved, That we believe the best interests of the trade demand that some arrangement be made for the government of the trade for the year 1879, by which the production of coal shall be restricted to the demand upon an equitable basis satisfactory to all parties in interest.

Resolved, That the present committee be continued, to negotiate and arrange for temporary stoppages after January 1st, 1879, pending negotiations for a permanent arrangement.

All that the above resolutions express is, that the Lehigh producers, as a rule, are willing to go into a combination, provided they can secure all the tonnage they want, and "pending negotiations" are willing that a "free fight" shall not be carried on more than say two weeks in a month. On the 5th of December there will be a Board of Control meeting, at which the Lehigh Committee will endeavor to establish rules to govern the fight.

The Reading Company has filled its quota for November and December, and has a large number of orders left over. The Lehigh Valley Railroad and the Central Railroad, of New Jersey, will soon fill their quotas. The Wyoming companies, however, are having difficulty in moving their products.

The Reading Company, at least, will strongly insist upon an increased allotment in December, and probably it will have additional support; but the Wyoming companies think that the market has enough coal allotted to meet all the requirements for the balance of the year. If they should ship their portion of the increased allotment, there is no question that the New York market, at least, would open the new year in a demoralized condition. This is a very important question and it will require a large amount of "harmony" to prevent trouble.

The prospects of a combination for 1879 are by no means encouraging; in fact, they are very bad, and on Wall street this opinion seems also to gain strength. It is, nevertheless, a very uncertain thing, and to suit all interests it will probably be pronounced first favorable and then unfavorable several times over, before April 1st. Everything at present points to ultimate failure.

The production of anthracite coal last week wa 530,569 tons, as against 515,372 tons the previous week, and 541,944 tons the corresponding week of 1877. The total production from January 1st to November 23d was 15,328,861 tons, as compared with 17,834,057 tons for the like period of last year, showing a falling off this year of 2,505,196 tons.

Bituminous.

There is nothing of interest to note in the dealings in this article. The producers of this class of coals are looking anxiously forward to the formation of an anthracite combination for 1879, being indebted to the one of this year for a large portion of the trade done.

THE DEPRESSED CONDITION OF THE COAL TRADE IN WALES.

The coal trade in the United States is bad enough, but in Wales it appears to be even worse. As in this country, over-production is the great evil, but there the natural laws of trade are left to solve the problem, and the theory is, the survival of the fittest. We quote the following from the circular of Messrs. Telleffsen, Wills & Co., bearing date Cardiff, November 15th:

"All hope is now given up of any improvement in trade until the new year sets in. The uncertainty as to what course the present political complications may take, combined with the serious blow given to commercial confidence by the failure of the City of Glasgow Bank, and subsequent failures in connection therewith prevent the possibility of any change for the better until these questions are fairly settled. There is no change in price, as the majority of colliery proprietors are already selling their coals at less than the cost of production, always hoping for better times. Meanwhile collieries continue to be closed, and the strongest must win."

New York.

Wholesale Prices of Anthracite Coal for December Delivery f. o. b. at Tide Water Shipping Ports, per ton of 2240 lbs.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
WYOMING COAL.	$	$	$	$	$	$
Lackawana, at Weehawken	3 60	3 60	3 65	3 80	4 20	3 65
*Pittston, at Newburg.....	.....	3 30	3 30	3 30	3 85	3 40
L. Val. Coal Co., at Amboy.	.....	.....	.....	.....	.....	.....
Wilkes-Barre at Pt. Johnson	3 35	3 35	3 40	3 45	3 90	3 30
Plymouth Red Ash at Port Johnson.....	.....	.....	3 40	3 45	4 00	3 30
Swoyers at Eliz. Pt. or S.A...	3 60	3 60	3 60	3 75	4 20	3 60
LEHIGH COAL.						
L. V. Coal Co., at P. Amboy.	4 10	..	3 90	3 90	4 10	3 50
Cross Creek, at Port John.	4 00	3 90	3 90	3 90	4 20	3 60
Buck Mount. Vein at Elizabeth Port or S. A.....	4 25	4 00	4 05	4 25	4 25	3 60
SCHUYLKILL COAL						
At Pt. Richmond, Phila.						
Hard White Ash.	3 50	3 50	3 50	3 55	3 95	3 40
Free-burning W. Ash. ...,	.....	.....	3 40	3 50	3 95	3 30
Schuylkill Red Ash.....	.....	.....	.....	3 75	4 00	3 30
Lorberry.....	.....	.....	3 80	3 95	4 00	3 40
Lykens Valley Vein.....	.....	.....	3 80	3 95	4 00	3 60
†*Alongside in N.Y. Harbor.*						
Hard White Ash	4 20	4 20	4 20	4 20	4 40	3 80
Free-burning W. Ash.....	.....	.....	3 90	4 05	4 40	3 80
Schuylkill Red Ash.....	.....	.....	.....	4 35	4 50	3 90
Lorberry.....	.....	.....	.....	4 60	4 60	4 25
Lykens Valley Vein.....	.....	.....	4 60	4 70	4 70	4 35

* Forty cents per ton additional for delivery in New York.

† On coal delivered f. o. b. at the Philadelphia and Reading Coal and Iron Co.'s Wharf at Williamsburg, the current date of harbor freight will be allowed from the prices here given.

Wholesale Prices of Bituminous Coal.

DOMESTIC GAS COALS.

Per ton of 2240 lb.	At the Shipping Ports.	Along side in New York.
Westmoreland and Penn.....	$4.25	.....
At Greenwich, Philadelphia		$5.50
At S. Amboy.	5.00	5.50

Kanawha at Richmond	4.10	5.40
Red Bank Cannel, Pa., at Philadelphia	8.00	8.50
Youghiogheny, Waverly Co., at Balt	4.00	5.65
Despard, West Va	4.50	6 00
Murphy Run, West Va., at Baltimore	3.75	5.85
Fairmount, West Va., " "	3 75	5.70
Newburg Orrel. Md. " "	3.75	6.00
Cannelton Cannel, West Va		10.00
" Splint " at Richmond.	6.00	7.00
" Gas Coal at Richmond	4.00	5.65
Peytona Cannel, W. Va.. at Richmond		10.00

MANUFACTURING AND STEAM COALS.

Cumberland at Georgetown and Alexandria	2.75@2.90	4.35@4.50
Cumberland, at Baltimore	2.90@3.00	4.35@4.50
Cl'rfi'd "Eureka" and "Franklin."		
At mines	0.75	
At Baltimore	3.25	4.50
At Philadelphia	3.25	4.50

FOREIGN GAS COALS.

	Sterling.	Am. cur'ncy
Newcastle, at Newcastle-on Tyne	7s.6d.	$2 50@ $3.50
Liv. House Orrel, at Liv.	25s.	13.00
Iron Hall Cannel "	35s.6d.	18.00
" Gas Cannel "	25s.6d.	10 00@ 10.50
Scotch Gas Cannel, at Glasgow, nominal	25s.	7.50
	Gold.	
Bl'k House, at Cow Bay, N.S.	$1.75	$4.50
Caledonia, at Pt. Caledonia.	1.50	4.25
Glace Bay at Glace Bay	1.50	4.00
Lingan, at Lingan Bay	1.50	
Intern'l Mines, at Sydney	1.75	4.50
Pictou, Vale Mines, at Pictou	2.00	4.70

Retail Prices.

Per ton of 2000 lbs.

Anthracite.

	G. & Egg.	Stove.	Chest.
Pittston coal delivered	$5.00	$5.00	$5.0
Lack. coal, delivered below 59th St.	4.50	4.75	4.50

Bituminous.

Liv. House Orrel	$18.00	American Orrel	$11.00
Liv. House Cannel	18.00	Red Bank Cannel	7.00
Am. "	11.00	Cumberland	9.00
Ca'n'lt'n Bl'k, or splint.	10.00		

Baltimore. Nov. 26, 1878.

[Specially reported.]

Wholesale Prices per ton of 2240 lbs.

In cars at Depot N. C. R. R.

HARD WHITE ASH, FREE-BURNING WHITE ASH, SHAMOKIN, ETC.

Lump and Steamboat	$4.05	Stove	$4.5
Broken	4.20	Chestnut	4.05
Egg	4.30		

LYKENS VALLEY RED ASH.

Broken	$4.40	Stove	$4.70
Egg	4.55	Chestnut	4.15

By cargo afloat, 15c. *less* per ton than car prices. To trade from wharf or yard, 50c. per ton *above* car prices.

Chicago. Nov. 26, 1878.

[Specially reported by Messrs. RENO & LITTLE.]

The following are the present prices of coal per ton of 2000 lbs. delivered:

Retail prices of coal delivered per ton of 2000 lbs

Lackawanna Stove	$6.25	Erie and Brier Hill	$5.00
" Chestnut	6.00	Wilm'gton & Ill.	$3 00@3.50
" Grate	6.00	Blossburg	5.50@6.0C
" Egg	6.00	Piedmont	7.00

Stocks of all kinds of coal liberal. Trade dull.

Cincinnati. Nov. 26, 1878.

[Specially reported by the Consolidated Coal & Mining Co.]

Per bushel of 72 lbs.

	Retail delivered.	Wholesale afloat.
Youghioghney	11c.	7½c.
Camden	9c.	5½c
Cannel	17@18c.	13c

Anthracite, delivered, $7@$8 per ton of 2,000 lbs.

Hamilton, Ont. Nov. 26, 1878.

[Specially reported by H BARNARD.]

Retail prices delivered per ton of 2000 lbs.

cr. or Wilkes-B. Grate.	$4.75	Lehigh Lump	$6.00
" " Egg	4.75	Brier Hill	5.00
" " Stove.	5.25	Massillon	4.50
" " Nut	4.75	Smithing	5.50

From wharf or yard to the trade, 50c. per ton additional Afloat by cargo per canal barge, 15c. per ton less than in cars at depot.

Indianapolis. Nov. 26, 1878.

[Specially reported by Messrs. COBB & BRANHAM.]

WHOLESALE BITUMINOUS.

On board cars, per ton of 200 lbs.

White River	None in market	Hocking Valley	4.20
Brazil Block	$2.10	Raymond City	3.40
Highland Grate	1.85	Youghiogheny	3.70
Indiana Cannel	3.65	Blossburg (smithing)	5.25
Peytona	5.70	Piedmont "	5.25

Per car, 12 tons.

Block coal, nut	$15.00	Block Slack	$12.00
Highland, "	14.00		

RETAIL BITUMINOUS.

Delivered per bushel of 70 lbs.

Raymond City	14c.	Block Nut, steam use	6c.
Brazil Block	10	" Slack, "	5
Highland Grate	9	Virginia Cannel	24
Block Nut, domestic use	10	Indiana Cannel	15
Highland Nut, " "	11	Youghiogheny	15
" " steam	8	Blossburg	24

GAS COKE.

Per bushel, measure containing 88 cubic inches.

Retail, crushed	8c.	Wholesale, lump	6½c.
" lump	7	" crushed	7½

ANTHRACITE.

Per ton of 2000 lbs.

Wholesale on Cars.		*Retail delivered.*	
Wilkes-Barre, all sizes	$5.50	Wilkes-Barre, all sizes	$6.50
Lackawanna, "	5.75	Lackawanna, "	6.50
Lehigh "	6.75	Lehigh, "	7.50

Louisville. Nov. 26, 1878.

[Specially reported by Messrs. BYRNE & SPEED.]

The demand at present is very good, in the city and on railroads.

Wholesale per bushel of 72 lbs.

Pittsburg	6c.	Kentucky, in river	5½c.
Raymond City	6	Kentucky, on cars	6

Retail.

Pittsburg	10c.	City made Coke	7c.
Raymond City	9	Gas Coke	8c.
Kentucky	8	Cannel Coal	17
Hard and soft Coke	8	Anthracite, per ton	$7 00

Montreal. Nov. 26, 1878.

[Specially reported by Messrs. ROBERT C. ADAMS & Co.]

Wholesale per 2240 lbs.

Scotch Steam	$4.50	Cape Breton Steam	$4.00
Pictou	4.25	Newcastle Smith's	5.00

Anthracite at retail, per 2000 lbs. delivered.

Stove	$6.50	Chestnut	$6.00
Egg	6.25		

Milwaukee. Nov. 26, 1878.

[Specially reported by Messrs. R. P. ELMORE & Co.]

Retail price per ton of 2000 lbs.

Lehigh prepared, chippings	@$7.00
" lump	@ 7.00
Lackawanna prepared (all sizes)	@ 6.00
Briar Hill	@ 5.00
Steam cokes	$3.75@ 4.75

Pittston, Pa. Nov. 26, 1878.

Pennsylvania Coal Company's Coal in Yard.

Retail per ton of 2,000 lb.

Lump, Egg, and Stove	$2 25
Chestnut	2 00
Pea	1 00

Delivered, 50 cents per ton additional.

Richmond. Nov. 26, 1878.

[Specially reported by S. H. HAWES, Dealer in Coal.]

Per ton of 2240 lbs. f.o.b.

Kanawha Cannel	$9.00	New River Bituminous	$3.30
Coalburg Splint	4.50	Clover Hill Coal	2.50
Lewiston "	4.50	Norwood Gas and	
Kanawha Gas Coal	4.10	Steam Coal	2.70

San Francisco. Nov. 21, 1878.

COAL.—Imports from January 1st to November 1st, 1878:

	Tons.		Tons.
Anthracite	22,695	English	36,450
Australian	109,883	Mt. Diablo	88,288
Coos Bay	26,048	Rocky Mountain	371
Cumberland	4,954	Ione	665
Bellingham Bay	2,820	Carbondale	3,125
Vancouver Island	108,592	Ounalaska	450
Seattle	93,355		

The general market is firm, and with light offerings receivers of Seattle and Wellington are enabled to obtain better prices from dealers than for some time past. We know of no cargo sales at this writing to report, the last cargo sales of Australian coming to our knowledge being at or about $7 for Wallsend, and which may be considered to-day's spot price. West Hartley is scarce and wanted, and so is Scotch splint for household purposes; quotable at $8.50@$9; Scotch steam, $6.50@$7. The receipts of coast and other coals for the week have been very light. The J. B. Bell, from Seattle, brought 1150 tons; the Cassandra Adams, from Nanaimo, brought 1900 tons; the Candida, from Sydney, brought 1800 tons; Harvest Home, from Seattle, 975 tons; Enoch Talbot, 1750 tons. At the close, we are advised of the purchase of two cargoes Wallsend, to arrive, at or about $7.25, it may be more—say per Lettereme, from Sydney, and per Llerbank, from Newcastle, N. S. W., in all 3000 tons.—*Commercial Herald*

Sandusky. Nov. 26, 1878.

[Specially reported by Messrs. BLACK & CLARKE, Agents Con. Coal and Mining Company.]

Per ton of 2000 lbs.

ANTHRACITE.

	Grate.	Egg.	Stove.	Chest.
Lehigh	$6 00	$6 00	$6 25	$5 75
Wilkes-Barre	4 80	4 90	5 15	4 65
Pittston	4 80	4 90	5 15	4 65

BITUMINOUS.

Massillon	$2 85	Straitsville	$2 00
Hocking Valley	2 50	Piedmont	1 54

Prices retailed delivered 50c.@75c. above car prices.

FREIGHTS.

Ocean Freights.

Ocean Freights on coal, iron, etc., per ton of 2000 lbs. to and from foreign and domestic ports, for four weeks ending Nov. 26th, 1878, are given below.

DATE.	From	To	Cargo.	R'te
Oct. 29	New York	Paugassett	Pig-iron	95
" 29	New York	Baltimore	Guano	90
" 29	New York	Norfolk	Guano	80
" 24	San Francisco	Nanaimo	Coal	2.00
" 24	Boston	San Francisco	Iron	†
" 24	Boston	New York	Salt	2½c
Nov. 1	Perth Amboy	Port Royal	RR. iron	1.75
" 1	Booth Bay	Savannah	*	1.75
" 2	Philadelphia	Somerset	Iron	1.55
" 5	Buffalo	Detroit	Pig-iron	40
" 5	Buffalo	Detroit	Salt	4
" 5	Buffalo	Toledo	Pig-iron	40
" 8	Wood's Hole	Pensacola	Guano	1.50
" 18	New York	Havana	Coal	1.50
" 18	New York	Baltimore	Iron	90
" 22	Booth Bay	Savannah	*	1.75
" 22	Boston	Alexandria	Salt	8
" 22	Curaçoa	Boston	Salt	9
" 23	Boston	New York	Salt	3
" 25	Perth Amboy	Wilmingt'n, N.C	RR. iron	2.00
" 25	Dutchess Junction	Richmond	Pig-iron	1.25
" 25	New York	Georgeto'n, D.C	Guano	1.50

* Phosphate. † $10@$12.

Coastwise Freights.

Per ton of 2240 lbs.

Representing the latest actual charters to Nov. 28th, 1878.

PORTS.	From Philadelphia.	From Baltimore.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
Alexandria	97½@1.00		
Albany			
Allyn's Point			75
Annapolis	60		
Augusta		1.90	
Baltimore	50		
Bangor, Me		1.90	1.50
Barnstable			
Bath, Me		1.75	
Boston, Mass	1.75@2.00	1.75	1.50
Braintree			
Bridgeport, Conn.	1.15	1.45	65
Bristol, R. I			75
Brooklyn	85@95		
Cambridge, Mass.	2.50		1.50
Charleston	1.15		
Chelsea	2.15		
Charlestown	2.00§		1.50
Cambridgeport			1.50
Danversport	2.00		1.75
East Cambridge	2.25§		1.50
East Boston			1.50
Eliz'b'th City, N.C			
Fall River	1.50	1.35	75
Georgetown	1.00		
Hackensack	1.16		
Halifax			
Hartford		1.35	
Hingham			1.50†
Hoboken			
Hudson			
Jersey City			
Lynn	2.25‡		1.50†
Medford	2.27@2.25†		
Middletown			
Nantucket, Mass.			
Newbern	85		
New Bedford	1.77	1.35	85
Newburyport		1.90	1.65
New Haven	95@1.15	1.35	65
New London	1.25†	1.35	70
Newport	1.60		75
New Rochelle	95		
New York	95†@1.00	1.30	
Newark			
New Orleans			
Norfolk, Va			
Norwich	1.75@1.78	1.50	75
Norwalk, Conn		1.50	
Pawtucket	1.85	1.85	85
Philadelphia			
Port Eades			2.50
Port Royal			
Portland	1.55	1.75	1.50
Portsmouth, Va			
Portsmouth, N.H.		1.87	1.65
Providence	1.50	1.35	75
Richmond, Va	90@1.00		
Saco			2.00
Salem, Mass		1.85	1.50
Savannah			
Saybrook			
Somerset	1.60		75
Southport	85		
Stamford	1.00		
Staten Island			
St. John, N. B			1.00‡
Trenton			
Troy			70
Wareham		1.85	
Washington	1.00		
Williamsburg	85		
Wilmington, N. C			

Newburg to St. John, N. B., $1.20.‡ Alexandria and Georgetown to Bostsn, 1.75@1.85. Richmond to New York, 1.40.

And discharging and towing. † And discharging. ‡ And towing. § 3 cents per bridge extra. ¶ And pilotage.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Nov. 29, 1878.

American Pig.—There has been but a very small business in pig-iron. There is an attempt among some to advance prices, but the market is still too heavy to enable this to be done, or even to hold them firm. The Allentown Iron Company will probably work up its ore on hand before stopping. What will be done after, has probably been determined to-day. We quote No. 1 Foundry at $16@$17.50; No. 2 Foundry, $15@$16.50, and Forge, $14@$15.

Scotch Pig.—There is only a retail business doing, We quote Eglinton, $21.75; Coltness, $23@$23.50, and Glengarnock, $22.50@$23.

According to the circular of Messrs. John E. Swan & Brothers, of Glasgow, bearing date of November 15th, the number of furnaces in blast was 87, as compared with 89 a year previous. The quantity of iron in Cannal & Co.'s stores was 199,798 tons, showing a decrease of 321 tons during the week. The shipments to November 9th showed a falling off of 52,255 tons, as compared with shipments to same date in 1877. The imports of Middlesbrough pig-iron for the same periods showed a falling off of 6387 tons. The

following were the quotations of the leading brands of No. 1 Scotch iron: Gartsherry, 50s. 6d.; Coltness, 52s.; Summerlee, 48s. 6d.; Langloan, 52s. 6d.; Glengarnock, 48s.; and Eglinton, 44s. 6d. Middlesbrough pig-iron was quoted as follows, f. o. b., Tees: No. 1 foundry, 40s. 6d.; No. 2, 38s. 6d.; No. 3, 37s.; No. 4, 36s. 6d.: No. 4 forge, 36s. 6d. Bessemer iron, f. o. b., Barrow, was quoted as follows: No. 1, 65s.; No. 2, 62s. 6d.; No. 3, 60s.

Messrs. Sanders Bros. under date of London, Nov. 13th, say:

"The market for Scotch pig-iron has been without special feature during the past month, prices having fluctuated but slightly. At one time, owing to one or two failures in the trade, transactions took place at as low as 42s. 10½d. for warrants, but this depression was not of long duration, the market recovering within a few days to 44s., and a fair amount of business has since been done between this point and 43s. 6d., at which we close. Shipping brands will be noticed to be rather lower in price than at the date of our last issue, the reduction being owing to slackness in demand at the beginning of the month, but things have somewhat improved since, although there is still considerable lack of activity."

Rails.—There has been a very large business done in steel rails during the week, including 42,000 tons to the Pennsylvania R. R. Co., 6000 tons to the Chicago, Burlington and Quincy R. R. Co., and a lot of 10,000 tons, particulars not given, and 2000 tons from New York ports. The large business was all for next year's delivery. The indications are that there will be a large business done during December. The prices received upon late sales are usually kept private, but they are supposed to have been low. We quote at Eastern mills at $41.50. Iron rails are quiet and quoted at $22@$36.

Old Rails.—Without business we quote at $18.50@$19.

Wrought Scrap.—We note sales aggregating 500 tons. We quote at $20@$21.

EXPORTS OF IRON FROM GREAT BRITAIN TO THE UNITED STATES.

From the Board of Trade Returns for the first ten months of 1876, 1877, and 1878 we take the following table, showing the insignificant position British iron holds in our market, and how the demand is being steadily reduced:

	1878.	1877.	1876.
	Tons.	Tons.	Tons.
Iron—pig	23,282	31,022	31,739
" bar, angle, bolt, and rod	4,313	4,659	2,163
" railroad, of all sorts	703	1,049	213
" hoops, sheets, and plates	754	4,807	6,587
" cast or wrought, and all other manufactures unenumerated	1,826	2,939	3,656
	87,782	88,342	74,578

Outside of tin plates the exports to this country amounted to but 30,878 tons the first ten months of this year, against 43,576 tons for the corresponding period of 1877. Tin plates show a falling off this year of but 560 tons, as compared with last year, and a gain of 13,204 tons as compared with 1876. This large increase is the result of a larger consumption, owing to their cheapness.

Baltimore. Nov. 25, 1878.

[Specially reported by Messrs. R. C. HOFFMAN & Co.]

The demand continues fair for good grades of iron, and prices unchanged. We quote:

Balt. Char.	$26.00@$28.00	M. & White	$13.00@$14.00
Va. "	26.00@ 28.00	C'lC.B.Blooms	50.00@ 52.00
Anth. No. 1	19.00@ 20.00	" " Billetts	52.00@ 55.00
" " 2	18.00@ 19.00	Refi'd Blooms	43.00@ 45.00
" " 3	16.00@ 17.00		

Buffalo. Nov. 26, 1878.

[Specially reported by Messrs. PALEN & BURNS.]

Prices per gross ton delivered on cars at Buffalo:

	4 mos.
No. 1 Foundry	$18.00
No. 2 "	17.00
No. 3 Forge	16.00
American Scotch A 1	19.00
" " B 1	17.00
" " No. 2	16.50
" " No. 3	.....
Best selected Connellsville coke, per net ton	4.75

Chattanooga. Nov. 26, 1878.

[Specially reported by J. F. JAMES, Dealer in Iron & Metals.]

Tenn., Ala. & Ga. Charcoal, No. 1 Foundry	$16 00@$17 00		
Tenn., Ala. & Ga. Charcoal, No. 2 Foundry	15 00@ 16 00		
Tenn., Ala. & Ga. Charcoal, Gray Forge	13 00@ 15 00		
Tenn., Ala. & Ga. Coke, No. 1 Foundry	18 00@ 19 00		
Tenn., Ala. & Ga. Coke No 2 Foundry	16 00@ 17 00		
Tenn., Ala. & Ga. Coke, Gray Forge	14 00@ 15 00		
Charcoal or Coke, white and mottled	13 00@		
Old rails	$18 00@$19 00	Wr'ght scrap, No. 2	$11 00
Old car wh'ls.	16 00@ 17 00	Cast scrap	10 00
Wr'ght scrap, No. 1	16 00	Muck bar	30 00@ 32 00

IRON ORES.

Red hematite or fossiliferous f. o. c. at mines, about 55 per cent metallic iron $1.25
Brown hematite about 55 per cent metallic iron 1.7

Cincinnati. Nov. 26, 1878.

[Specially reported by Messrs. TRABER & AUBERY, Commission Merchants for the sale of pig iron, blooms, ore, etc.]

Below please find closing quotations of our pig-iron market, viz.:

CHARCOAL.

H'n'g Rock	No. 1 Foundry & B 1	$21 00@$22 00	—4 mos.
"	No. 2 "	20 00@ 21 00	—4 mos.
"	Soft Silver Gray	18 00@ 19 00	—4 mos.
"	Mill	18 00@ 19 00	—4 mos.
Tennessee	No. 1 Foundry	20 00@ 21 00	—4 mos.
"	No. 2 "	19 00@ 20 00	—4 mos.
"	Mill	17 00@ 18 00	—4 mos.

STONE COAL.

Ohio	No. 1 Foundry	$16 00@ 17 00	—4 mos.
"	No. 2 "	15 00@	—4 mos.
"	No. 3 "	14 00@	—4 mos.
"	No. 4 "	13 00@	—4 mos.
"	Mill	16 00@	—4 mos.

COKE.

Ohio & W. Va.	No. 1 Foundry	18 00@ 19 00	—4 mos.
" "	No. 2 "	17 00@ 18 00	—4 mos.
" "	Stove	16 00@ 17 00	—4 mos.
" "	Mill	17 00@	—4 mos.

CAR-WHEEL

H'n'g R., C. B	Hecla, Vesuvius, Etna, Buckhorn, Jefferson.	$30 00@ 35 00	—4 mos.
Maryland,	Cedar Point	35 00@	—4 mos
Missouri,	Maramec	28 00@ ...	—4 mos

BLOOMS.

Charcoal ..... $45 00@$50 00- cash.

SCRAP IRON.

Cast ..... 40c. @ 45c.—cash
Wrought ..... 62½c.@ $1.00—cash

Cleveland. Nov. 26, 1878.

[Specially reported by Messrs. C. E. BINGHAM & Co.]

No. 1 Red Specular	$6.00	per ton cash.
No. 2 " "	5.00	" "
Red Hematite	4.25	" "
Lake Champlain ore	5.25	" "

FOUNDRY IRON.

No. 1 L. S. Charcoal	$22 00	Am. S., No. 1, Ch. Val	$20 00
No. 2 " "	21 00	" " B—1, " "	18 00
No. 1 Anthracite	20 00	" " No. 2 " "	18 00
No. 2 "	19 00	No. 1, Massillon	19 00
No. 1 Bituminous	20 00	B—1, "	17 00
No. 2 "	18 00	No. 2, "	16 00

CAR-WHEEL AND MALLEABLE IRON.

No. 3, L. S. Charcoal	$23 00	Nos. 5 & 6, L. S. Char.	$23 00
No 4, " "	23 00		

BESSEMER IRON.

Nos. 1 & 2, L. S. Char $23 00

FORGE IRON.

No. 1, Gray	$18 00	White and Mottled	$16 00

Columbus, O. Nov. 27, 1878.

[Specially reported by Messrs. KING, GILBERT & WARNER, Dealers in Pig Iron and Ores.]

The demand has been steady during the past week, both for forge and foundry grades. Under the influence of the increased demand for the past few weeks, there seems to be a better feeling, but no materia advance in price, except on best grades of forge irons, which are held firm. We quote as follows:

FOUNDRY IRONS

No. 1 Hanging Rock Charcoal	$22.00@$22.50
No. 2 " " "	21.00@ 21.50
No. 1 Hocking Valley soft and strong from pure limestone ores	18.25@ 18.75
No. 2 Hocking Valley soft and strong from pure limestone ores	17.25@ 17.75
No. 1 American Scotch	18.00@ 18.50
No. 1 Moxahala	18.00@ 18.50
No. 2 "	17.00@ 17.50
No. 1 Shawnee	18.00@ 18.50
No. 1 Silver Gray	16.50@ 17.00
No. 2 " "	15.50@ 16.50

MILL IRONS.

Gray neutral	16.00@ 16.50
Mottled and white neutral	15.00@ 15.50
Gray cold short	15.50@ 16.00
Mottled and white cold short	14.50@ 15.00

Louisville. Nov. 27, 1878.

[Specially reported by Messrs. GEORGE H. HULL & Co.]

The market is very firm, and has a strong upward tendency.

The usual time, four months, is allowed on quotations below:

FOUNDRY IRONS.

	No. 1.	No. 2.
Hanging Rock Charcoal	$21 00@$22 00	$19 00@$20 00
Southern Charcoal	18 00@ 18 50	16 50@ 17 00
H'n'g Rock, Stc'l & Coke	19 00@ 20 00	18 00@ 18 50
Southern Stonecoal & Coke	18 50@ 19 00	17 00@ 17 50
"Amer. Scotch"	$18@$19	Silver Gray $16@$17.00

MILL IRONS.

No. 1 Charcoal, Cold-short & Neutral	$16 50@$17 00
No. 1 Stc'l & Coke, Cold-short & Neutral	16 50@ 17 00
No. 2 Stc'l & Coke, Cold-short & Neutral	15 50@ 16 00
No. 1 Missouri and Indiana, Red-short	20 00@ 21 00
White & Mottled, Cold-short & Neutral	14 50@ 15 00

CAR-WHEEL AND MALLEABLE IRONS.

Hanging Rock, Cold Blast	$29 00@$33 00
Alabama and Georgia, Cold Blast	28 00@ 29 00
Kentucky, Cold Blast	25 00@ 30 00

Milwaukee. Nov. 26, 1878.

[Specially reported by Messrs. R. P. ELMORE & Co.]

CHARCOAL IRON.

No. 1 Lake Superior per gross ton	$23 00—4 mos.	
" 2 " " " "	22 00—4 mos.	
No. 1 Anthracite per gross ton	23 00—4 mos.	
" 2 " " " "	22 00—4 mos.	

STONE COAL AND COKE.

Warner's Am Sc'th (Bk. Band, per ton	$24 00@	—4 mos
Soft Silvery per ton	21 00@	—4 mos
Ohio Stone Coal	22 00@	—4 mos

CAR WHEEL.

Lake Superior ores per ton ..... $24 00@25 00—4 mos

Pittsburg. Nov. 26, 1878.

[Specially reported by A. H. CHILDS.]

	4 mos.		4 mos.
No. 1 F'dry	$19.00@$20.00	M. & White	$15.00@$16.00
No. 2 "	18.00@ 19.00	Hot Blast Ch.	20.00@ 23.00
Gray Forge	16.50@ 19.00	Cold Blast W.	35.00@ 37.00

Richmond, Va. Nov. 27, 1878.

[Specially reported by ASA SNYDER, Esq.]

Less activity in pig-iron. Old rails and wrought scrap remain firm. I quote as below:

Amer. Scotch Pig Iron			$21.50@$22.50
Anthracite	"	" No. 1	19.00@ 20.00
"	"	" No. 2	18.50@ 19.00
"	"	" No. 3	17.00@ 18.00
"	"	Mottled	15.00@ 16.00
Coke	"	No. 1	19.00@ 20.00
"	"	No. 2	18.00@ 19.00
Va. Cold Blast Charcoal Pig Iron, cold short			19.00@ 22.00
" " " " "		neutral	27.00@ 28.00
" Warm " " " "		cold short	18.00@ 20.00
" " " " "		mill	17 00@ 18 00
Old Rails			17.00@ 18.00
Wrought scrap No. 1			16.00@ 17.00
Cast scrap—Machinery			15.00@ 16.00
Richmond Refined Bar Iron			2.00@ 2.10
Horse-shoes			4.00@ .....
Mule-shoes			5.00@ .. ..
Old Dominion nails (standard size)			2.25 keg.

Freight by sail to New York, $1.60 for 2240 lbs.

St. Louis. Nov. 26. 1878.

[Specially reported by Messrs. SPOONER & COLLINS, Commission Agents for all kinds of Iron.]

Since our last report the pig-iron business has been much increased. For some grades of iron there is considerable demand, though not as much as we think there will be after the 1st of January, 1879. Our market generally is only fair. Prices remain as last reported, with an upward tendency. Old rails are stiff at prices named, and hard to secure.

COLD BLAST CHARCOAL—ALL NUMBERS.

Hanging Rock	$23@$25	Assorted Bar Iron	$1.95 rates.
Tennessee	22@ 23	No. 1 Wr'ght Scrap,	90c. cwt.
Kentucky	22@ 23	Heavy cast "	65c. "
Missouri	22@ 23	Light " "	40c. "
Georgia	22@ 23	Old rails	$19 00@$21 00
Alabama	22@ 23	Old carwheels	17 00@ 18 00

	No. 1.	No. 2.	Mill.	White and Mottl'd
Missouri stone coal	$21 00	$20 00	$19 00	$17 00
" charcoal	20 00	19 00	18 00	.....
Tennessee charcoal	20 00	18 50	17 50	.....
Tenn. coke very soft and strong	20 00	19 00	17 00	16 00
Hanging Rock charcoal	22 00	20 00	19 00	.....
" " cold short	23 00	21 00	20 00	.....
	Ex No. 1	No. 1.	B No. 1.	No. 2.
Alice Hanging Rock coke.	$22 00	$21 00	$19 50	$19 00
Moxahala Black Band ores	21 00	20 00	19 50	18 00

METALS.

NEW YORK, Friday Evening, Nov. 29, 1878.

Thanksgiving day has greatly disturbed the business of this week, making it one of the most quiet we have had for a long time.

RECEIPTS OF METALS AT NEW YORK FOR THE FOUR WEEKS ENDING NOVEMBER 28TH AND YEAR FROM JANUARY 1ST, 1878.

	Nov. 7.	Nov. 14.	Nov. 21.	Nov. 28.	Year from Jan. 1
Copper, bbls	337	466	405	391	22,295
Copper, boxes	.....	.....	.....	.....	113
Copper, cakes	315	571	192	160	17,494
Lead, pigs	11,537	4,167	7,624	3,935	272,049
Spelter, pieces	249	....	1,266	1,381	42,343
Quicksil'r, flasks	...	....	....	....	1,221

Gold Coin.—The price of gold has ranged during the week under review from 100⅛ to 100¼, closing at 100¼.

Copper.—The business has been only in a small way, at 15⅞c., closing at 16c. asked. According to the latest cable advices Chili bars, in London, were quoted at £60 10s., and best selected, £66 10s. The last shipment by lake was made on the 23d inst. The quantity that we shall receive overland during the winter will largely depend on the condition of the roads. The very low price of copper, however, should, with many companies, make this an unprofitable business.

Under date of Nov. 15, we receive the following from London:

"Chili bars have found buyers to-day to the extent of 150 tons, of which the major portion was good ordinary brands at £60 cash, a small quantity of special mark at £60¼, and 50 tons best at £61, same terms. Sellers are still very scarce, and orders, limited as to price, exceedingly difficult to execute. The quotations given in our report of yesterday, will hold good for this evening also; but the available metal is, if anything, rather more limited. In Regulus there is a rumor that a small lot (50 tons), on spot has been sold at 12s. per unit. Wallaroo is a

trifle firmer, and £69 declined for 10 tons, usual cash terms; the nominal values are £69@£70. Burra quoted £66@£67."

The deliveries for the first 15 days of this month slightly exceeded the imports. On the 14th—

"The quantity of Wallaroo remaining in second hands, ex the various public sales, is 894 tons, of which 779 tons are cake, 115 tons ingot."

Tin.—The latest cable advices quoted Straits at London £65, and Singapore $19.50. An arrival of about 1200 slabs of Straits during the week, in connection with the dull market, had the effect of thoroughly unsettling prices, and a lot sold under 16c. At the close, however, there is more firmness, 16¼@16½c. being asked. Straits is offered, for January and February delivery, seller's option, 15c., and due in December, at 15½c. Of L. & F. there were 5 tons sold at 14½c., and 10 tons at 15c. At the close 15@15¼c. was asked.

A correspondent, under date of London, November 15th, says:

"Tin is about 6d.@9d. higher, but not very active at the advance. About 30 tons, cash, sold at 63s. and 63¼s., and, at the close, sellers demanded 63½s. Arrival metal continues to be offered below cash values, and we note 20 tons Straits, shipment this year, at equal to 62¼s., delivered in warehouse, London."

Tin Plates.—There has been only a jobbing business done. We quote as follows: "Charcoal, bright, ⅛ X., Melyn grade, $5.87½@$6, and Allaway grade, $5.75@$5.87½; charcoal ternes, Allaway grade, $5.25 @$5.37½; coke, bright, B. V. grade, $5.12½, and roofing, 14×20, $4.70."

Messrs. Robert Crooks & Co., of Liverpool, under date of November 14th, 1878, say of tin and terne plates:

"It seems that shipments last month have been on an extensive scale, and this, coupled with the short-time movement, has imparted a degree of strength to the market which it previously lacked. Charcoals have not improved to the same extent as Cokes, though in them a decidedly better tone is manifest. Coke tins have advanced quite 3d. per box, and in many cases 1s. is demanded."

Lead.—The following sales are reported: 500 tons of ordinary, at 3·85c.; 200, at 3·87½c.; 100, at 3·90c.; 100, at 3·95c.; and 100 tons of corroding lead, at 4c. The position of the market is not much changed, and if the present large holders continue to hold their stocks, they can control the market for some time. The asking price at the close is 4c., but probably business would be done at 3·95c.

The San Francisco *Journal of Commerce* of November 22d says:

"The first shipment of lead that we have ever heard of to Great Britain, took place yesterday by the H. S. Gregory. The quantity was 140,280 lbs. This will, we believe, be the beginning of a heavy trade with Great Britain in this important article of commerce.

"The Twilight cleared during the week with 6000 pigs (634,091 lbs.), worth $22,217.53, shipped by the Selby Lead Co.; and the Gaelic cleared to China with 2606 bars and 27 pieces (360,625 lbs.), valued at $13,125.

Messrs. Sanders Bros., of London, under date of November 13th, say:

"Lead has fallen about £1 on the month, the arrivals being extremely heavy, and the home demand dull and unsatisfactory. Stocks continue to increase, and the prospect is any thing but a cheering one.

	—Month ended October 31st—		
	1876.	1877.	1878.
Exports to United States.....	2	102	31 tons.
" other countries....2,690		4,461	3,721 "
	—Ten months ended October 31st—		
	1876.	1877	1878.
Exports to United States..	1,161	2,905	221 tons.
" other countries	28,721	3,[illegible]	30,342 "

They quote ordinary brands at £14 15s. as compared with £19 15s. a year previous.

Spelter and Zinc.—We note sales aggregating 125 tons of spelter, some of which realized less than 4½c. We quote at 4⅞@4¾c. Sheet zinc is unchanged at 5½c.

Antimony.—This article is quiet and quoted at 11¾@12¼c., according to brand.

Quicksilver.—The San Francisco *Commercial Herald* of Nov. 21st, says: "The steamship Gaelic, hence for Hong Kong on the 16th inst., carried 3780 flasks; also to Japan, 55 flasks. The present nominal price is 40c."

THE BULLION MARKET.

NEW YORK, Friday Evening, Nov. 29, 1878.

Silver has been firm in London and here, and would undoubtedly have gone higher had not the German government sold $1,250,000 last week. It is reported as still being willing to sell at an advance of ⅛d. This effectually precludes any marked advance, and only some extraordinary demand can materially advance prices, while, should Germany meet the market at its present figure, it would probably go lower. London quotes 50 11/16d.; New York, 110⅝, and San Francisco, 15 per cent discount.

DAILY RANGE OF SILVER IN LONDON AND NEW YORK, PER OZ.

DATE.	London Pence.	N. Y. Cents.	DATE.	London Pence.	N. Y. Cents.
Nov. 23....	50⅝	110¼	Nov. 27.	50¾	110½
Nov. 25....	50¾	110½	Nov. 28.	....	.....
Nov. 26....	50¾	110½	Nov. 29.	50 11-16	110⅜

BULLION SHIPMENTS.

We give below a statement showing the latest bullion shipments in addition to those announced in our issue of Nov. 23:

November	11—Indian Queen	Nev.	.....	$4,473.00
"	17—Manhattan	"	.....	11,700.00
"	16—California	"	.....	97,130.40
"	16—Con. Virginia	"	.....	65,611.78
"	13—Northern Belle	"	.....	3,874.90
"	18—Navajo	"	.....	5,300.00
"	18—Independence	"	.....	12,500.00
"	14—Bodie	Cal.	.....	11,641.81
"	13—Silver Reef	Utah	.....	10,917.16
"	14—Leeds	"	.....	2,981.02
"	19—Butte	Montana	.....	12,203.00
"	16—Black Jack	Idaho	.....	12,000.00

The Silver Market in London.—LONDON, November 29.—The *Times*, in its financial article this morning says: "Business in silver is at a complete standstill. Holders adhere to the recent rates, and purchasers, in the face of the increased drawing of India bills next week, are indisposed to pay so much. The market is nearly bare, and the unsettled condition will probably continue as long as both business and supplies are wanting."

The Coin Resources of the Country.—From Treasurer Gilfillan's annual report we extract the following: "The coin resources of the country have steadily increased from $67,586,705.95 on September 30th in 1876 to $133,585,072.24 in 1877, and to $238,007,574.59 in 1878. * *

"The act of February 28th, 1878, required the coinage of silver dollars of the weight of 412½ grains troy, of standard silver. The first coins under this act were received at this office from the mint in March, 1878, and were exchanged with the public for gold coin. The amount so exchanged at the mints and at this and other offices was $1,042,027. The total amount of standard silver dollars coined to date is $18,282,500, of which amount there is in the mints and offices $13,359,877, and in circulation $4,922,623. At present they are sent only to depositary banks and the offices of the Treasury, and are used in payment for silver bullion and in payment to express companies on acconnt of their charges for transportation of the coin. The largest payments of silver dollars have been made at New York and San Francisco, but the coins issued at those points immediately find their way back to the Treasury vaults, either as receipts from customs or as deposits on account of silver certificates, or in payment of subscriptions to the four per cent loan. On October 31st, 1878, there were $14,359,877 of this coin on hand, and $4,922,623 outstanding. The aggregate amount sent to depositary and other banks is $3,374,995.

"The total amount of silver certificates issued to date is $8,575,780; at Washington, $461,380; at New York, $846,000; and at San Francisco, $7,768,400. Only $1,577,380 are now in circulation, the remainder having been paid into the Treasury through the Custom Houses, and not reissued. The certificates issued at San Francisco found their way at once to the New York Custom House. There is is no demand for silver certificates in exchange for silver except at points where silver bullion is purchased by the department to be paid for in standard silver dollars.

"The substitution of fractional silver coin for fractional currency has progressed during the year, though not with the rapidity of the former year. The amount of fractional currency redeemed since June 30, 1877, is $4,191,934.15. Of this amount, however, $1,118,526.19, during the present calender year, was redeemed in United States notes. The total amount of fractional currency redeemed under the operation of the act of April 17th, 1876, to October 30th, 1878, was $25,297,539.29. Since April 18th, 1876, there has been issued of fractional silver coin $39,728,166, and though the coinage has been suspended temporarily, there is still a demand, which is supplied from the stock on hand in this office and in the mints, which, together with that in other offices, amounts at this time to $6,067,960.18. The amount paid out since June 30th, 1877, to date, is $6,542,893. The amount of fractional silver paid out at the several offices of the Treasury from April 18th, 1876, to October 31st, 1878, amounted to $39,728,166."

Exports and Imports of Bullion from Great Britain:

	—Imports.—		—Exports.—	
	October.	10 months ended October.	October.	10 months ended October.
1878. ..	£4,464,238	£32,988,901	£3,483,079	£19,638,594
1877. ..	2,612,339	31,494,339	3,459,354	34,825,639
1876. ..	5,026,836	26,234,811	1,591,217	22,832,049

Instructions for the Purchase of Gold Bullion at the Denver Mint.—The following instructions for the purchase of gold bullion at the Denver mint have been promulgated.

1. Gold bullion of a fineness less than 600 thousandths will not be purchased.

2. Where the bullion contains silver in quantity sufficient to warrant it to be parted on account of the depositor, a charge of four cents per ounce gross will be deducted, and the parted silver credited to the seller.

(*a*) Silver allowed to the depositor, is calculated on the basis of refining the gold to 990 thousandths.

(*b*) In all deposits where the silver, calculated on the above basis, amounts to fifty cents after the parting charge of four cents per ounce gross has been deducted, it will be allowed to the depositor; but if, after the parting charge has been deducted from the value of the silver, fifty cents does not remain, no allowance for silver will be made to the depositor.

3. The charge of melting and assaying will be one tenth of one per cent on the gross value of the deposits, which will also be deducted from the value of the bullion.

4. A deduction will be made from each purchase sufficient to pay the expenses of transmitting the bullion to the Philadelphia mint.

5. When a deposit of partable bullion contains over one hundred thousandths of base metal, an additional parting charge of one cent per ounce gross will be made.

6. When the character of a deposit is such as to require toughening, a charge for that operation will be made of from one half to two cents per ounce, according to the condition of the deposit; and on a deposit requiring toughening of less weight than five ounces, the charge will be imposed as if the weight was five ounces.

7. When a deposit of less value than $100 is received, the melting and assaying charge of one tenth of one per cent will be imposed, as if the value was $100.

The purchase of gold bullion for greenbacks at this mint is going on at the rate of $100,000 per month, and will probably soon reach $150,000.

The United States mint at New Orleans will be re-opened in the beginning of January.

LONDON, November 25.—Germany, on Saturday, sold a quarter of a million pounds' worth of silver, at 50⅜d. per ounce. It will, it is understood, demand 50¾ for any more.

Salt Lake Ore and Metal Market.

SALT LAKE CITY, Utah, Nov. 29, 1878.

Argentiferous Lead (*Base Bullion*), $35 per ton for lead; $1.12 per ounce for silver; $20 per ounce for gold. The quotations for silver are based upon the silver in the lead of 80 to 120 ounces per ton of 2000 lbs.

The *Inter Ocean's* correspondent, under date of the 18th inst., says:

"There have been sales of 40 cars of bullion, to go to Philadelphia, at $28 per ton for lead, and $1.07½ per ounce for silver, which establishes the market.

"The shipments of ore and bullion for the week ending November 16th were as follows: 30 cars bullion to Pittsburg, 2 cars bullion to Omaha, 1 car bullion to Philadelphia, 10 cars bullion to Chicago, 1 car copper ore to Phœnixville; bullion, 884,893 pounds; copper ore, 21,580 pounds; total, 906,473 pounds.

FINANCIAL.

New York Stocks.

NEW YORK, Friday Evening, Nov. 29, 1878.

The dealings in the coal stocks have been light, yet prices have steadily declined under causes fully shown in our Coal Trade Review. Delaware and Hudson Canal has ranged from 45@37¼, closing at 38½; Delaware, Lackawanna and Western R.R. records sales of 48,455 shares, at 50@45⅝, closing at 46¾; New Jersey Central, with sales of 4510 shares, ranged between 32 and 28, closing at 29⅜; 150 shares of Consolidated Coal Co. sold at 25.

The *Evening Post* of to-day says: "The annual report of the Syracuse, Binghamton, and New York Railroad Company to the State Engineer shows that notwithstanding the depressed condition of the coal business the road is in a good condition. The road earned some $39,000 more than its interest, which it carried forward to the surplus fund, which is now $98,510.36. As the road is free of floating debt, and is now laid with steel rails, thus reducing its operating and repair expenses in future, it is expected that hereafter its net earnings will increase."

Philadelphia Stocks.

PHILADELPHIA, Friday Evening, Nov. 29, 1878.

A liberal business has been done on a declining market, Thanksgiving Day reducing the business considerably, however. Lehigh Coal and Navigation Company opened on Saturday at 16⅛, and declined to 15¼ to-day, the total sales for the week amounting to 1853 shares. Lehigh Valley Railroad stock does not show much the probabilities of a failure to form a combination. The highest price of the week was $37⅛, and the lowest $36¾. The sales of this stock aggregated 1744 shares. Reading Railroad declined from $13¼ to $12½, with sales of 16,645 shares. Pennsylvania Railroad has shown sympathy with the

COAL STOCKS.

Quotations of New York stocks are based on the equivalent of $100. Philadelphia prices are quoted, so much per share.

NAME OF COMPANY.	Capital Stock.	SHARES. No.	SHARES. Par Val.	Last Dividend. Mo.	Y.	A't.	Rate per Ann.	Nov. 23. H.	Nov. 23. L.	Nov. 25. H.	Nov. 25. L.	Nov. 26. H.	Nov. 26. L.	Nov. 27. H.	Nov. 27. L.	Nov. 28. H.	Nov. 28. L.	Nov. 29. H.	Nov. 29. L.	SALES.
	$		$				Per c'nt													
Consol. Coal.	10,250,000	102,500	100	Jan.	77	2½	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25	.....	150
Del. & H. C.	20,000,000	200,000	100	Aug	76	4	9	44	43⅝	43⅝	41½	42⅛	41⅜	42¼	37¾	.....	.....	38¾	37¼	3,900
D., L. & W. RR	26,200,000	524,000	50	July	76	2½	5	50	49½	49⅞	48¼	48¾	47	48⅛	40¼	.....	.....	46⅛	45⅝	48,455
Lehigh C. & N	10,448,550	208,971	50	Nov	76	1½	5½	16¼	16⅛	16¼	16	16	15¼	15⅞	15⅝	.....	.....	15⅝	15½	1,853
Leh. V'y R. R	27,228,855	540,858	50	July	78	1	....	37⅛	36¾	37⅛	37	37	36¾	36⅞	36¾	.....	.....	36⅞	36¾	1,744
Maryl'd Coal	4,400,000	44,000	100	Jan.	76	1½	1½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
N. J. C. R. R.	20,600,000	206,000	100	Apr	76	2½	2½	32	31	31¼	30⅝	31	29¼	30½	29	.....	.....	29⅜	28	4,510
Penn. Coal...	5,000,000	100,000	50	May	78	3	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Penn. R. R...	68,870,200	1,337,404	50	May	77	1½	8	33⅛	33	33⅛	32¾	33	32¾	32⅞	32¾	.....	.....	32⅞	32¾	18,505
Ph. & R. R. R	34,278,175	685,563	50	Jan	76	42½	10	13¼	13⅛	13¼	13⅛	13⅛	12⅞	13	12¾	.....	.....	12⅝	12⅛	16,645

The Delaware and Hudson Canal Co. has paid in dividends to date $38,821,104, and the Philadelphia and Reading $43,012,497.
Total Sales..... 95,762.

rest of the market, and declined from 33⅛ to 32¾, the total transactions amounting to 18,505 shares.

Coupons and interest on the bonds of the following companies will fall due during the month of November:

Belvidere and Delaware R. R. Co.—Coupons.
Camden and Amboy.—6s of 1883, interest.
Lehigh Valley R. R. Co.—6 per cent, bonds, coupons.
Pennsylvania and New York Canal Co.—7 per cent bonds, coupons.
Philadelphia and Reading R. R. Co.—Gen. M. 7s reg., and gold 6 per cent bonds, coupons.
Lehigh Coal and Navigation 6s of 1877 and 1882, and gold 6s of 1887, coupons.
Pennsylvania R. R. Cons. Mort. 6s, coupons.

AUCTION SALES:

Westmoreland Coal Co.—139 shares, at $46¾@$45 per share.
Barclay Coal Co.—25 shares at $26½ per share.
Cattawissa Railroad Co.—200 shares preferred at $29¼ per share.

Miscellaneous Stocks and Quotations.

Sales and quotations of the stocks and bonds dealt in here, at Philadelphia and Baltimore, for the week ending the 29th inst. are given in the following tables. The Philadelphia quotations will have a * affixed. The Baltimore quotations are indicated thus †.

STOCKS.	Par Value.	High'st	Lowest	Closing	Sales: Shares.
American Coal Co.	$25	... ..	.....	30	.....
St.L.,I.M.& S.R.Co..	100	15½	15	15¼	1,960
Spring Mt. Coal Co.	50	.....	.....	50	.....
*Cambria Iron Co..	50	.....	.....	59	.....
*Penn. Salt Mf'g Co.	50	....	.....	67	2
*Westm'land C. Co.	50	.....	.....	50	.....
*Buck Mt. Coal Co..	50	.....	.....	38	....
*Schuyl. Nav. Co...	50	.....	.....	...	.....
†B.&O.RR.Co.1st pf	.....	95	.....	95	1
†B.&O.RR.Co.2d pf	100	.....	.....	92	.....
" " " com	90	87½	86	86	83
†George's C'k C. Co	100	.....	.....	86½	.....
†S. Clara M'g Co...	100	.....	.....	25	.....
†Atlantic Coal Co..	10	.....	.....	75	.....

BONDS.	Princ'l. When Due.	Int'est. When Due.	Hig'st.	Lowest	Amount.
D., L. & W., 7s, conv	1892	J. & D.	104¾	104½	2,000
" " " " 2d mtge.	1881	M. & S.	.....	.....	.....
N.J.C.,1stmtge.new	1890	F. & A.	.....	.....	.....
" " " 1st mtge.,con	1899	Q.	88	87¼	†28,000
" " " convt.....	1902	M. & N.	72⅛	72	*28,000
Lehigh & W. B., con	1899	Q.	60	.....	8,000
Am. Dock & Imp. 7s	.....	J. & J.	55	.....	1,000
St.L.I.M.& S..1st mt	1892	F. & A.	109¼	109	10,000
Ches. & O., 1st mtge	1899	M. & N.	.....	.....	.....
D & H C Co., 1stm.rg.	1884	J. & J.	96⅞	96	2,000
" " " " " "	1891	J. & J.	.....	.....	.....
" " " " m.loan cp	1894	A. & O.	.....	.....	.....
" " " " " rg.	1894	A. & O.	.....	.....	.....
" " " " new mge.	.....	.....	.....	.....	.....
*L.V.R., 1stm.6s.cp.	1898	J. & D.	.....	113	....
" " " rg.	1898	J. & D.	.....	111	.....
" " " 2d m. 7s,rg.	1910	M. & S.	116½	.....	6,000
" " " con.m.6s,rg	1823	J. & D.	102½	99¼	5,000
" " " 6s cp.	1923	J. & D.	.....	101½	.....
*Pa.RR., 1st m.6s,cp	1880	J. & J.	105⅝	105¼	6,000
" " g. m., 6s, cp.	1910	J. & J.	....	.....	.....
" " " 6s, rg.	1910	A. & O.	110	.....	1,000
" " con.m.6s,rg.	1905	Q.	.....	100	.....
" " " 6s, cp.	1905	J. & D.	101	.... .	1,000
" " new loan, 6s	.....	.....	.....	.....	.....
*P.& R. R., 1st m.6s, R. C. 43-44.....	1880	J. & J.	.....	.....	.....
P. & R. R., 1st m. 6s, R. C. 48-49.....	1880	J. & J	.....	.....	.....
P.& R. R.,2d m.7s cp	1893	A. & O.	.....	110	.....
" " " scrip....	1882	J. & J.	50	49½	2,900
" " " in.m.7s,cp	1896	J. & D.	45	.....	1,000
" " " c.m.7s,cp.	1911	J. & D.	.....	101	.....
" " " " 7s. rg.	1911	J. & D.	.....	99	.. ..
" " " cvt.7s,R.C	1893	J. & J.	.....	.....	.....
" " C.& I.Co.,Deb 7s, R. C.....	1892	M. & S.	20	.....	2,000
& R.C.& I. Co., m. 7s, R. C.....	'92-3	various	.....	.....	.....
L. Nav. Co.,6s,rg.m.	1884	J. & Q.	.....	105	.....
" " RR., rg. m.	1897	F. & Q.	.....	105½	.....
" " cvt. co. G. R.	1894	M. & S.	.....	...	.....
" " " Gold R. C.	1897	J. & D.	.....	94¾	.....
" " con.m.7s,rg.	1911	J. & D.	.....	.....	.....
*P.& N.Y.C.,7s,R.C.	1896 / 1906	J. & D.	117	.....	1,000
*Pa Canal, 6s. cp..	1910	J. & J.	.....	65	.....
*Schuyl.Nav.,1st m. 6s. rg.....	1897	M. & Q.	.....	.....	.....
*Sus.Coal, 6s, rg...	1911	J. & J.	80	.....	5,000
†Balt.&O. RR., 6s..	1880	J. & J.	....	102	.....
" " " " 6s..	1885	A. & O.	.....	105	.....

Total transactions for the week.....$109,900
* Assented. † $10,000 assented, selling at from 73@72½.

Gas Stocks.

NEW YORK, Friday Evening, Nov. 29, 1878.

The continued dullness and depression of the market for gas stocks still prevails. The changes in the market during the week have been a decline of $5 per share each in the stocks of the Mutual of New York, and the Nassau of Brooklyn, and a slight advance in the stock of the New York Company.

The Harlem Gas Co.—We are indebted to the *Sun* of yesterday for the following concerning this company:

"As yet, the Knickerbocker has not begun to supply the Harlem district, but its preparations and announcement that it will furnish gas for not more than $2 have induced the Harlem to lower its price from $2.75 to $2.

"The following circular has been distributed:

"'*To the Stockholders of the Harlem Gas Light Company:*

"'GENTS: It is necessary to execute a mortgage on our property and franchises to secure or obtain money for the extension of our business and other purposes. Will you please call at the office, No. 61 Liberty street, and see our President, on or before the 30th of November, 1878, who has the necessary papers which we wish you to sign?

"'R. W. RODMAN, Vice-President.

"'NEW YORK, October 28th, 1878.'

"One stockholder said this was a surprise to him, because, as the company had occupied and controlled the territory it supplies for many years, he supposed it was fully equipped, and had the means to make any desired extension.

"At the company's office it was said that the officers consider it advisable to place a mortgage of not more than $500,000 upon the property and franchises. To this end, the assent of two thirds of the stock is required. The officers purpose to issue at present only a part of the bonds secured by this mortgage. The company has $170,000 of subscription bonds outstanding. These will be funded under the mortgage. 'We have also a floating debt of about $80,000,' said an officer, 'and we wish to liquidate that.'

"All together the company has spent about $300,000 over and above its capital stock of $1,800,000. According to the latest annual statement, the total indebtedness of the company was, on January 1st, 1878, $354,798.14; as the bonded debt was $170,000, the floating debt at that time was $184,798.14. From the statement of the official placing the floating debt at about $80,000, it is inferred that the company have discharged about $100,000 of indebtedness in the last ten months.

"It is noteworthy that with an indebtedness of $354,798.14, of which $184,798.14 was a floating debt, the company declared and paid a semi-annual dividend of 3 per cent February 4, within thirty days after the sworn statement of this indebtedness was filed. The August dividend was passed.

"After paying the debts of the company, it is the purpose of the officers to issue such amount of bonds under the mortgage as will give them money to build a new retort, and purchase and lay pipes for the extension of their business. Who the principal creditors of the company are is not known; but it has long been an open secret that the company has purchased almost all of its coal—the largest expenditure a gas company has—of its President, Mr. Burr Wakeman, who owns a coal mine in West Virginia, known as the Murphy Run Coal Company. Respecting this transaction, an officer of the company said that it had given rise to many unpleasant rumors, but as a matter of fact the operation had been very favorable to the gas-light company. He said that by purchasing of Mr. Wakeman, the company got its coal at 30 cents less a ton than it could get it at from the Pennsylvania regions, and the coal was at least twenty per cent more productive than other gas coals.

"The existing state of affairs in the Harlem Company, as made known by its proposal to mortgage its property, is variously commented upon by brokers in gas stocks and by the officers of other companies.

"It is cited that the Harlem has always had the exclusive supplying of the district above Seventy-ninth street and to the Harlem River, and also that it has always charged 50 cents more a thousand feet than the companies supplying the district below there. The highest price ever attained by the stock of the Harlem is 215. Last January, just previous to the payment of the last dividend, it sold at 97, and in May at 95. October 2d it was quoted at 40@50, and the latest sale within a week was at 37½."

The San Francisco Gas Question.—The *Stock Report* of the 20th inst. says:

"The gas question seems to be getting into a greater muddle than ever. The City and County Attorney has decided that the resolution fixing the price of gas at $3 per thousand feet was illegal, in that, under the consolidation act, the resolution should have been passed to print and taken the course of regular ordinances. The Board last night refused to rescind its resolution, and refused to entertain another offered by Supervisor Gibbs, fixing the price at $2.50 a thousand, which it was designed should be passed to print and so become legal. So the matter stands at present. The Supervisors have illegally reduced the price of gas and refuse to reconsider their action. Of course the Gas Company will pay no attention to the illegal resolution, and will go on charging $3.75 a thousand as of old. The people have no redress, and the popular will is set at defiance. Verily, it begins to look as if there was some truth in the rumor that the Gas Company have got things about where they want them—though at considerable expense."

Salt Lake City, Utah, has 222 street lamps, which cost $10,522 per year, equal to about $47 each.

The Cincinnati Gasoline Contract.—A correspondent to the *Enquirer*, under date of the 21st inst., says:

"I noticed in the *Enquirer* of yesterday an article headed as above, which is a total misrepresentation of the facts.

"The article in question states that Council awarded the contract to the American Gas-Light Company at $17 per lamp, per annum, when the bid of Mr. John H. Dailey was eighty cents per lamp less. The facts are these: The bid of the American Gas-Light Company was $17, while the bid of John H. Dailey for lighting the same time-table was $18.90. The American Gas-Light Company is, in fact, $1.90 per lamp less than Dailey."

The Gas Question in Brooklyn.—At a meeting of the Brooklyn Board of Aldermen on the 25th inst. the following resolutions were adopted:

Resolved, That the Board of City Works be, and they hereby are directed to advertise, for ten days successively, for proposals for lighting, extinguishing, cleaning, repairing, etc., of the public lamps of this city, furnishing coal gas or other illuminating material for lighting said lamps and the public buildings of the city, as per plans and specifications on file in the Department of City Works, and all parties proposing to light the public lamps with other illuminating material than coal gas must propose to light not less than fifty lamps in each ward, at a uniform price throughout the whole city.

Resolved, That the time-table herewith attached, aggregating 3790 hours, be adopted as the basis for proposals to be submitted, the proposer to state the price complete for each street-lamp per annum, and per 1000 feet for gas for public buildings.

AUCTION SALES:

People's Gas-Light Co.—250 shares, at $20¼ per share.
Metropolitan Gas-Light Co., of Brooklyn.—3 shares, at $55½ per share.
New York Gas-Light Co.—40 shares, at $81 per share.

The following list of Companies in New York and vicinity is corrected weekly by GEORGE H. PRENTISS, Broker and Dealer in Gas Stocks, No. 30 Broad street, New York:

COMPANIES IN NEW YORK AND VICINITY.	Capital Stock.	Par.	DIVIDENDS. Rate per ann.	DIVIDENDS. Am. of last.	DIVIDENDS. Date of last.	QUOTATI'NS Bid.	QUOTATI'NS As'd.
	$		P. ct.				
Mutual, N. Y....	5,000,000	$100	6	1½	Oct., '78	55	65
" Bonds...	90,000	1,000	6	3½	Aug., '78	95	104
N. York "	4,000,000	.....	8	4	May, '78	80	85
Metrop. "	2,500,000	100	10	5	Aug., '78	100	110
" Certfs..	1,000,000	.....	7	3½	" '78	95	98
Harlem "	1,850,000	50	6	3	Feb., '78	30	40
Manhat. "	4,000,000	50	....‡	5	May '78	145	155
Brooklyn, Bkln.	2,000,000	50	15	5	Apr., '78	115	120
Nassau	1,000,000	25	....‡	3	July, '78	50	55
" Certfs..	700,000	1,000	7	3½	May, '78	80	90
People's.....	1,000,000	10	....‡	3½	Jan., '76	17	25
" Certfs....	300,000	1,000	7	3½	July, '78	75	90
" Bonds....	325,000	.....	7	3½	May, '78	90	96½
Metrop. "	1,000,000	100	5	2½	May, '78	50	60
W'msb'g "	1,000,000	50	8	1½	July, '78	75	85
" Certfs...	1,000,000	.....	7	3½	July. '78	85	90
Citizens'.....	1,200,000	20	....‡	3	July, '78	50	60
" Certfs...	320,000	1,000	7	3½	Apr '78	90	95
I. C., N. J.....	750,000	20	10	7½	July, '78	120	140
Municipal, N.Y.	466,000	50	.....	.....	.....	76	85
" Bonds..	750,000	.....	.....	.....	.....	.....	...
.....	.....	..	.....	..	.....	.....	...

Copper Stocks.

Reported by WILSON W. FAY & Co., Brokers in Mining and Miscellaneous Stocks, Room 7, Traveller Building, 31 State street.

BOSTON, Wednesday Evening, Nov. 27, 1878.

The market continues to be comparatively active, and the stocks are all stronger, most of them having advanced from two to eight per cent. There seems to be no particular reason for the sudden rise in these stocks, with the exception, perhaps, of the drawing out of some of the investors in Californias, who have decided to place their money in the market where they will have a better opportunity of knowing what they are buying than they have had on the other.

However, the present rise looks somewhat like a flurry, and the stocks are liable to react to their old figures.

Allouez is quiet at 2¼@2¾.

Calumet & Hecla has advanced rapidly from 171, and has sold as high as 179, but closes a little weaker at 178@178½.

Copper Falls is unchanged at 1@1¼. Mr. Cook, the Treasurer, has just returned from the lake, and reports that things are looking quite favorably.

Franklin is somewhat firmer, although rather quiet, closing 4½@5.

Osceola sold up to 13½ and has been quite active, but closes weaker at 12@13, and sales at 12¾.

Pewabic remains quiet.

Quincy advanced and sold up to 115, but also closes weaker at 11@11½.

Ridge also advanced under the influence of the general rise and sold at 1¼, and closes firm at 1⅛@1¼.

Duncan dropped suddenly during the week to 4⅜, a small lot selling at 4; the danger of an assessment seems to have been discovered very suddenly, and the market dropped quickly in consequence. It closes firm at 4½@4⅝.

International is weak at 45c@50c., and sales at 50c.

Silver Islet is very firm, having sold up to 42, and closing $42 bid and 45 asked.

The Phœnix Mine.—The *Mining Gazette* of November 21st says: "A mass was thrown down in the 120-fathom level in this mine last week, which promises to turn out in the neighborhood of fifty-five or sixty tons of copper. A horn of copper is showing itself in the 130 level."

Gold and Silver Stocks.

NEW YORK, Friday Evening, Nov. 29, 1878.

As is usual in the event of a holiday, Thanksgiving Day caused the loss of a whole day this week, while business was partially neglected on Wednesday and did not get fairly under way to-day. Nevertheless the dealings at the Mining Exchange show a respectable aggregate, while direct with San Francisco, under the belief that the stocks in that market are only suffering a temporary decline, there has been a very good business. In mining properties several tranactions of importance are said to have been closed, while others are looking very promising.

The San Francisco stocks have been liberally dealt in at our Mining Exchange, especially those that receive special advertising in this market. We note the following sales: California, 195 shares at $9½@$8⅝; Consolidated Virginia, 850, at $8⅝@$7½; Alta, 20, at $8½; Eureka Consolidated, 10, at $35⅝; Grand Prize, 15, at $11@$11⅜; Independence, 4245, at $1.35@$1.35; Leopard, 35, at $1.40; Leviathan, 300, at 60@50c.; Navajo, 1060, at 60@80c.; Silver Hill, 10, at $2; Silver Prize, 700, at 20@15c.; Tip Top, 450 shares at $1.50@$1.60. We should think that the Eastern public would not be quite so anxious in the future to go into these stocks because they are "cheap."

It does not follow that because a stock is low that it must advance. The public was advised to purchase Leviathan, and it was made to show a good advance; but how many are there, who, if they were to sell out at the prevailing prices, would make good their investment? Independence is another example. As noted above, Silver Hill and Silver Prize are apparently calling for public attention. We advise the public to let all new applicants for favors as mining investments severely alone, until their merits are made public on thoroughly reliable expert authority, and not give too much heed to all that is printed on the subject.

In the prominent stocks of the regular list we note dealings as follows: Hukill, 215 shares, at $4.25@$4.20; Moose, 700, at $4.50@$4.80; New York and Colorado, 700, at $1.50@$1.45; Ontario, 70, at $39¼@38¾; Plumas, 3500, at $4@$3.70; Seaton, 100, at 70c.; Findley, 15,800, at 65@64c.; Cashier, 100, at $1¾.

In the fancies we note the following sales: American Flag, 13,800 shares, at 27@24c.;

GENERAL MINING STOCKS.

Dividend Paying Mines.

Name and Location of Company.		Feet on Vein.	Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total levied to date.	Assessments. Date and amount per share of last.		Dividends. Total paid to date.	Dividends. Last Dividend.			Rate p. An	Highest and Lowest Prices per Share in Currency at which Sales were Made. Nov. 23. H.	Nov. 23. L.	Nov. 25. H.	Nov. 25. L.	Nov. 26. H.	Nov. 26. L.	Nov. 27 H.	Nov. 27 L.	Nov. 28 H.	Nov. 28 L.	Nov. 29. H.	Nov. 29. L.	Sales.
Alps	Nev.	800	.....	30,000	.....	204,000	Sept.	1878 $1 00	37,500	Apr.	1876	$0 50	..	..	...	....	....	....	....	....	....	....	....	....	.....
Belcher, G. S.	Nev.	1,040	10,400,000	104,000	100	1,392,200	Oct..	1878 1 00	15,397,200	Apr.	1876	1 00	12	....	....	....	....	....	....	....	....	....	....	....	.....
Bobtail, G.	Col.	2,500	1,136,630	227,326	5	*	.....	.....	56,831	Nov.	1877	25	....	....	....	....	....	....	....	2½	....	....	....	....	100
Bobtail Tunnel, G.	Col.	.....	100,000	20,000	5	52,000	July	1873 0 30	48,000	June	1878	50	....	....	....	....	....	....	....	....	....	....	....	....	.....
Bodie, G.	Cal.	.....	5,000,000	50,000	100	25,000	Feb.	1878	650,000	Oct.	1878	2 00	20	....	....	....	....	....	....	....	....	....	....	....	.....
California, G. S.	Nev.	600	54,000,000	540,000	100	.....	.....	.....	29,160,000	Aug.	1878	1 00	24	9⅛	.....	9⅜	....	9¼	9	8¾	8⅝	.....	....	9¼	.....	195
Calumet & Hecla, C.	Mch	.....	2,000,000	80,000	25	1,200,000	.....	.....	13,450,000	Aug.	1878	5 00	20	178	.....	179	178	179	179	178½	....	....	....	....	93
Central, C.	Mch	.....	500,000	20,000	25	100,000	June	1862 0 65	1,260,000	Feb.	1878	5 00	....	....	....	....	....	....	....	....	....	....	....	....	.....
Chollar Potosi, G. S.	Nev.	1,400	2,800,000	28,000	100	1,750,000	Sept.	1878 5 00	3,060,000	Feb.	1872	1 00	....	....	....	....	....	....	....	....	....	....	....	....	.....
Copper Falls, C.	Mch	.....	1,000,000	20,000	50	533,000	May.	1876	100,000	Nov	1871	1 00	....	....	....	....	....	....	....	....	....	....	....	....	.....
Cons. Virginia, G. S.	Nev.	710	54,000,000	540,000	100	474,600	June	1873 3 00	40,500,000	June	1878	1 00	12	8⅝	8½	8⅝	8¼	8⅛	8	8	7½	....	....	7⅛	....	855
Confidence, G. S.	Nev.	130	2,496,000	24,960	100	256,320	Apr.	1878 0 50	78,000	May.	1865	8½	8½	....	....	....	....	....	....	....	....	....	....	....	.....
Cons. Her. & Roe	Col.	16,500	1,000,000	100,000	10	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Crown Point, G. S.	Nev.	600	10,000,000	100,000	100	1,873,370	Sept.	1878 1 00	11,588,000	Jan..	1875	2 00	24	....	....	....	....	....	....	....	....	....	....	....	.....
Daney	Nev.	2,000	.....	108,000	....	70,200	July	1877 0 20	56,000	July	1863	1 10⅜	....	....	....	....	....	....	....	....	....	....	....	....	.....
Eureka Cons., G. S. L.	Nev.	.....	5,000,000	50,000	100	100,000	....	1876 1 00	2,950,000	Aug.	1878	3 00	24	....	....	35⅜	....	....	....	....	....	....	....	....	10
Eureka G. Mg., G.	Cal.	1,680	2,000,000	20,000	100	.....	.....	.....	2,149,000	Apr.	1878	0 25	....	....	....	....	....	....	....	....	....	....	....	....	.....
Franklin, C.	Mch	.....	500,000	20,000	25	360,000	June	1876 5 00	585,000	Nov.	1871	1 00	....	....	....	....	....	....	....	....	....	....	....	....	.....
Gila	Ariz	.....	.....	100,000	....	50,000	Apr.	1878 0 25	50,000	Aug.	1875	0 25	....	....	....	....	....	....	....	....	....	....	....	....	.....
Gould &Curry, G. S.	Nev.	612	10,800,000	108,000	100	2,666,000	Apr..	1878 1 00	3,826,800	Oct.	1870	10 00	....	....	....	....	....	....	....	....	....	....	....	....	.....
Grand Prize	Nev.	1.500	.....	100,000	....	100,000	July.	1878 1 00	400,000	Feb.	1878	1 00	....	....	....	....	....	....	....	11	....	....	....	11⅜	....	15
Hale & Norcross, G. S.	Nev.	400	11,200,000	112,000	100	2,914,000	Aug	1878 1 00	1,598,000	Apr.	1871	5 00	12	....	....	....	....	....	....	....	....	....	....	....	.....
Hukill, G. S.	Col.	3,288	1,000,000	100,000	10	*	.....	.....	.....	Nov.	1878	0 10	12	....	....	4¼	....	....	....	4.20	....	....	....	....	215
Independence	Nev.	1,500	.....	100,000	....	55,000	Feb..	1878 15	125,000	Oct.	1878	25	....	1.65	1.60	1.60	1.50	1.50	1.40	1¼	1.35	....	....	1.55	....	4,245
Kentuck, G. S.	Nev.	95	3,000,000	30,000	100	300,000	Aug.	1878 1 00	1,252,000	Mar.	1870	5 00	....	....	....	....	....	....	....	....	....	....	....	....	.....
K. K. Cons.	Nev.	.....	.....	50,000	....	250,000	Nov	1878 1 00	50,000	Sept.	1873	0 25	....	....	....	....	....	....	....	....	....	....	....	....	.....
Leeds	Uth.	3,000	.....	60,000	....	.....	.....	.....	18,000	Oct..	1878	0 15	....	....	....	....	....	....	....	....	....	....	....	....	.....
Leopard, L. G. S.	Nev.	1,500	5,000,000	50,000	100	175,000	Oct..	1878 50	162,500	Dec.	1876	0 50	....	..	....	....	....	....	....	1.40	....	....	....	....	35
Manhattan	Nev.	.....	.....	50,000	....	50,000	Oct..	1878 1 00	400,000	Feb.	1877	1 00	....	....	....	....	....	....	....	....	....	....	....	....	.....
Merrimac, S.	Mas.	1,500	500,000	100,000	5	*	June	.....	120,000	Mar.	.....	.....	12	....	....	....	....	....	....	....	....	....	....	....	.....
Minesota, C.	Mch.	.....	1,000,000	20,000	50	436,000	.....	1869 1 00	1,820,000	Mar.	1876	0 50	....	....	....	....	....	....	....	....	....	....	....	....	.....
Modoc	Cal.	4,000	.....	100,000	....	350,000	Sept.	1878 0 50	50,000	Dec.	1876	0 50	....	....	....	....	....	....	....	....	....	....	....	....	.....
Moose	Col.	39,000	2,000,000	200,000	10	*	.....	.....	550,000	Mar.	1878	0 25	10	4½	....	....	....	4½	....	4.80	4½	....	....	4.45	....	700
National, C.	Mch.	.....	500,000	20,000	25	195,000	Oct..	1875 1 00	360,000	Oct.	1873	1 00	....	....	....	....	....	....	....	....	....	....	....	....	.....
N. Y. & Colorado, G.	Col.	.....	1,000,000	50,000	20	*	.....	.....	20,000	Mar.	1877	0 20	....	....	....	1.50	1.45	1.45	....	....	....	....	....	1.45	....	700
Northern Belle, S.	Nev.	1,600	5,000,000	50,000	100	.....	.....	.....	1,425,000	Feb.	1878	1 00	....	....	....	....	....	....	....	....	....	....	....	....	.....
Ontario.	Uth.	3,000	10,000,000	100,000	100	.....	.....	.....	1,850,000	Nov.	1878	50	12	39½	38¾	....	....	....	....	....	....	....	....	....	70
Ophir, G. S.	Nev.	675	10,080,000	100,800	100	3,436,800	Nov.	1878 1 00	1,394,400	Mar.	1864	4 00	....	....	....	....	....	....	....	....	....	....	....	....	.....
Pewabic, C.	Mch.	.....	500,000	20,000	25	185,000	June	1868 3 00	460,000	July	1873	1 00	....	....	....	....	....	....	....	....	....	....	....	....	.....
Phœnix, C.	Mch.	.....	1,000,000	20,000	50	817,500	Sept.	1870 3 00	20,000	Jan.	1876	1 00	....	....	....	....	....	....	....	....	....	....	....	....	.....
Plumas	Cal.	.....	1,000,000	100,000	10	.....	.....	.....	90,000	Nov.	1878	10	....	4	3.80	3.95	3.90	.....	.....	3.85	3.75	....	....	3.70	....	3,500
Polar Star, G. S.	Col.	1,300	500,000	50,000	10	*	.....	.....	5,000	Jan.	1878	0 10	....	....	....	....	....	....	....	....	....	....	....	....	.....
Quincy, C.	Mch.	.....	200,000	20,000	10	.....	.....	.....	2,230,000	Feb.	1878	5 00	....	....	....	....	....	11⅝	....	....	....	....	....	....	35
Raymond & Ely, G. S.	Nev.	5,000	3,000,000	30,000	100	630,000	Oct..	1878 1 00	3,075,000	Sept.	1873	3 00	....	....	....	....	....	....	....	....	....	....	....	....	.....
Ridge, C.	Mch.	.....	500,000	20,000	25	200,000	.....	.....	90,000	Feb.	1875	1 00	....	1¼	....	.....	....	1¼	....	....	....	....	....	....	250
Rye Patch	Nev.	1,600	.....	30,000	....	97,500	Nov.	1876 0 50	105,000	Dec.	1877	0 25	....	....	....	....	....	....	....	....	....	....	....	....	.....
St. Joseph, L.	Mo.	2,000 acs.	1,000,000	100,000	10	.....	.....	.....	250,000	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	....	.....
Savage, G. S.	Nev.	800	11,200,000	112,000	100	3,972,500	Sept.	1878 1 00	4,460,000	.....	1869	3 00	....	....	....	....	....	....	....	....	....	....	....	....	.....
Seaton, G. S.	Col.	1,700	500,000	50,000	10	*	.....	.....	.....	May	1877	0 10	12	....	....	70c	....	....	....	....	....	....	....	....	100
Sierra Nevada, G. S.	Nev.	3,650	10,000,000	100,000	100	2,350,000	Oct..	1878 3 00	102,000	Jan.	1871	1 00	10	....	....	....	....	....	....	....	....	....	....	....	.....
Silver King	.....	.....	.....	.....	.....	.....	.....	.....	450,000	Nov	1878	0 50	....	....	....	....	....	....	....	....	....	....	....	....	.....
Standard	Cal.	.....	.....	50,000	....	50,000	July	1878 1 00	700,000	Oct..	1878	1 00	....	....	....	....	....	....	....	....	....	....	....	....	.....
Yellow Jacket, G. S.	Nev.	1,200	12,000,000	120,000	100	3,798,000	Sept.	1878 1 00	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
McClinton	Cal.	1,000	.....	50,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....

Non-Dividend Mines.

Allouez, C.	Mch.	.....	1,000,000	20,000	50	940,000	May	1876 5 00	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Alpha, G. S.	Nev.	300	3,000,000	3,000	100	240,000	Mar.	1878 1 00	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Alta	Nev.	600	.....	100,000	....	885,000	July	1878 1 00	.....	.....	.....	.....	.....	....	....	8½	....	....	....	....	....	....	....	....	20
Am. Flag, G.	Col.	5,300	600,000	60,000	10	*	.....	.....	.....	.....	.....	.....	.....	26c	25c	27c	24c	25c	24c	26c	24c	.....	.....	.....	13,800
Andes	Nev.	2,000	.....	100,000	....	355,000	Oct	1878 0 25	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Baltimore Cons.	Nev.	1,050	.....	84,000	....	1,015,000	Apr.	1878 0 50	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Benton	Nev.	600	.....	108,000	....	37,800	Aug.	1878 0 35	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Bechtel	Cal.	.....	.....	61,000	....	75,000	Nov.	1878 0 25	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Bertha & Edith, G.	Vir.	645 acs.	3,500,000	350,000	10	*	.....	.....	.....	.....	.....	.....	.....	9c	8c	11c	9c	11c	9c	10c	9c	....	....	11c	9c	125,000
Best & Belcher, G. S.	Nev.	545	10,080,000	100,800	100	438,590	Apr.	1878 1 00	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Boyle	Nev.	600	.....	108,000	....	16,240	Aug.	1878 0 15	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Buckeye	Col.	.....	2,000,000	400,000	5	*	.....	.....	.....	.....	.....	.....	.....	58c	56c	....	....	54c	....	55c	....	....	....	56c	....	2,900
Bullion, G. S.	Nev.	943½	10,000,000	100,000	100	2,952,000	Aug.	1878 1 50	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Caledonia, G. S.	Nev.	2,188	10,000,000	100,000	100	1,540,000	Nov.	1878 0 50	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Cashier	Col.	.....	500,000	250,000	2	*	.....	.....	.....	.....	.....	.....	.....	1¾	....	....	....	....	....	....	....	....	....	....	100
Challenge	Nev.	90	.....	50,000	....	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Cleveland, G	Col.	3,715	250,000	25,000	10	*	.....	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	....	.....
Cons. Imperial, G. S.	Nev.	468	50,000,000	500,000	100	775,000	Sept.	1878 0 20	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Con. N. Slope & E. C.T.	Col.	15,000	500,000	10,000	50	*	.....	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Dahlonega	Ga.	.....	250,000	250,000	1	*	.....	.....	.....	.....	.....	.....	.....	16c	15c	17c	16c	16c	..	16c	15c	....	....	15c	....	8,000
Dana, C.	Mch.	.....	500,000	20,000	25	68,000	Jan..	1863 0 50	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Dawson, S.	Ont.	.....	1,200,000	60,000	20	.....	.....	1878	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Day	Nev.	1,500	.....	100,000	....	55,000	Sept.	1878 0 25	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Dayton	Nev.	1,600	.....	100,000	....	750,000	Apr.	1878 0 25	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
De Frees	Ariz	1,500	.....	100,000	....	115,000	Oct..	1878 15	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Duncan, S.	Ont.	.....	1,200,000	60,000	20	75,000	July	1876 41¾	.....	.....	.....	.....	.....	5¼	5⅛	4⅞	4⅝	4⅝	4⅛	4⅛	4	....	....	....	2,055
Exchequer, G. S.	Nev.	400	10,000,000	100,000	100	380,000	Jan..	1878 1 00	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Findley, G.	Geo.	.....	200,000	200,000	1	.....	.....	.....	.....	.....	.....	.....	.....	....	....	65c	64c	64c	....	64c	....	....	....	....	15,800
Gold Placer, G.	Col.	.....	5,000,000	200,000	25	.....	.....	.....	.....	.....	.....	.....	.....	28c	27c	29c	27c	29c	27c	30c	28c	....	....	33c	28c	28,800
Granville, G.	N. C.	357 acs.	1,000,000	100,000	10	*	.....	0 50	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Humboldt, C.	Mch.	.....	500,000	20,000	25	100,000	Sept	1878 0 15	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Hussey	Nev.	4,500	.....	100,000	....	95,000	Oct..	1876 0 25	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
International, S.	Ont.	.....	1,200,000	60,000	20	.....	.....	.....	.....	.....	.....	.....	.....	50c	....	50c	....	....	....	....	....	....	....	....	300
Julia, G. S.	Nev.	3,000	11,000,000	110,000	100	745,000	Nov.	1878 1 00	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Justice, G. S.	Nev.	2,100	10,500,000	105,000	100	2,658,500	Aug.	1878 1 05	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
King's Mountain, G.	N. C.	.....	1,200,000	120,000	10	*	.....	1877	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Kossuth	Nev.	2,700	.....	108,000	....	421,200	Aug.	.... 0 15	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Lacrosse	Col.	3,900	1,000,000	100,000	10	*	.....	.....	.....	.....	.....	.....	.....	34c	31c	38c	34c	37c	35c	39c	35c	....	....	37c	36c	65,020
Leviathan	Nev.	2,000	.....	100,000	....	240,000	May.	1878 05	.....	.....	.....	.....	.....	60c	....	....	....	....	....	50c	....	....	....	50c	....	300
Luzerne	Col.	4,200	5,000,000	500,000	10	*	.....	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	....	.....
Madison, C.	Mch.	.....	500,000	20,000	25	123,000	Sept	1876 0 10	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Mariposa preferred	Cal.	44,387	5,000,000	50,000	100	1,425,000	June	1877 1 00	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
" common	Cal.	acres.	10,000,000	100,000	100	1,425,000	June	1878 1 00	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
McCracken	Ariz	4,500	.....	100,000	....	100,000	Oct .	1878 1 00	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Martin White	Nev.	.....	.....	100,000	....	500,000	July	1877 0 50	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Mesnard, C.	Mch.	.....	500,000	20,000	25	160,000	Apr.	1876 0 50	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Mexican, G. S.	Nev.	600	10,080,000	100,800	100	217,400	May.	1878	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Minnietta Belle	Cal.	1,500	.....	100,000	....	75,000	Apr.	1878 0 50	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Mt. Bross Tunnel	Col.	8,600	2,000,000	200,000	10	*	.....	1878	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Navajo		1,500	.....	100,000	....	125,000	May.	1878 0 25	.....	.....	.....	.....	.....	60c	....	....	....	70c	60c	65c	....	....	....	80c	....	1,060
New York	Nev.	1,000	.....	100,000	....	780,000	Nov.	1878 0 30	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Occidental	Nev.	1,706	.....	40,000	....	72,500	Feb.	1877 0 25	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Orig. Keystone	Nev.	1,500	.....	.....	....	.....	Oct.	1878 0 50	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Overman, G. S.	Nev.	1,200	3,840,000	38,400	100	3,404,280	Sept.	1878 3 00	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Osceola, C.	Mch.	.....	1,000,000	40,000	25	2,567,880	Nov.	1877 3 00	.....	.....	.....	.....	.....	13¼	..	13½	....	....	....	....	....	....	....	....	150
Petherick, C.	Mch.	.....	500,000	20,000	100	165,533	Mar.	1876 0 50	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Pleasant View, G.	Col.	1,200	200,000	20,000	10	*	.....	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Quicksilver preferred	Cal	8,500	4,291,300	.....	.....	*	.....	.....	.....	.....	.....	.....	.....	33½	....	34	....	34	....	34¼	34½	....	....	....	600
" common	Cal.	acres.	5,708,700	100,000	100	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Rockland, C.	Mch	.....	500,000	20,000	25	495,000	Jan..	1874 1 00	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Sag. Belcher, G. S.	Nev.	160	640,000	6,400	100	244,800	Apr.	1876 5 00	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Silver Hill, G. S.	Nev.	5,400	10,800,000	108,000	100	1,296,000	Sept.	1878 0 50	.....	.....	.....	.....	.....	....	....	....	....	2	....	....	....	....	....	....	10
Silver Prize	Nev.	1,500	.....	100,000	....	40,000	Nov.	1878 0 15	.....	.....	.....	.....	.....	20c	....	....	....	....	....	....	....	....	....	....	700
Star, C.	Mch.	.....	500,000	20,000	25	265,000	Mar.	1876 0 50	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Superior, C	Mch.	.....	500,000	20,000	25	340,000	Mar.	1878 0 25	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Tiptop	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	1½	....	....	....	1.60	....	450
Tioga	Cal.	1,500	.....	100,000	....	20,000	Oct.	1878 0 20	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Trojan	Nev.	1,500	.....	100,000	....	240,000	Oct.	1878 0 25	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Union Cons. G. S.	Nev.	850	10,000,000	100,000	100	310,000	Apr..	1874 0 25	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Utah	Nev.	1,000	.....	20,000	....	680,000	Oct .	1878 1 00	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Ward	Nev	1,200	.....	110,000	....	66,000	Sept	1878 0 30	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Wells Fargo	Ne	1,500	.....	108,000	....	216,000	Sept	1878 0 50	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....
Trio	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...

Total Assessment levied to date $57,586,713

G. Gold. S. Silver. L. Lead. C. Copper. * Non-Assessable

Total Dividends paid to date $151,810,231

Total Sales for the week ..... 286,178.

Bertha and Edith, 125,000, at 11@9c.; Buckeye, 2900, at 58@54c.; Dahlonega, 8000, at 17@15c.; Gold Placer, 38,800, at 27@33c.; Lacrosse, 65,020, at 31@39c. The dealings in this class of stocks may be "business," but let us see what showing the aggregate makes. The total sales of the fancy stocks for the week amounted to 253,520 shares, or over ⅛ of all the business done at the Mining Exchange, and the aggregate value of said shares was but about $52,000, or less than the value of 400 shares of New York Central Railroad stock. Do not let us be understood as belittling the business of the Mining Exchange when we say that even a part of this small showing may have been done by "washing."

A few months since Silver Islet was selling at 50c. a share. We note sales this week, in Boston, of 266 shares, at $40@$42 per share. Our special correspondent gives elsewhere some interesting information concerning this mine.

The Homestake mine in the Black Hills has an 80-stamp mill, which is crushing about 175 tons of ore per day, yielding about $9 per ton. The cost of mining and milling ranges from $2.50@$3.50—say $3—per ton, showing a daily profit of about $1000. An additional 80-stamp mill will be erected as soon as possible, and will be finished by spring. It is estimated that there is a 10-years supply of ore in sight, and that 500 stamps could be supplied. The October run was $52,000, and expenses $16,000. After deducting the cost of building the new mill, it is expected that monthly dividends of 50c. can be begun in February, and after that increased to perhaps $1 per month. We welcome another really valuable mine to our market, and the open manner in which Ontario has been managed has inspired such public confidence that no doubt the shares of Homestake will be quickly applied for at their opening price of 20—the same as that at which Ontario opened.

The Governing Committee of the Mining Exchange has passed the following resolution upon a protest made by Mr. Alex. R. Chisolm, proprietor of the *Mining Record*, upon its action in removing from the list of stocks called at the Exchange the stock of the Memphis Mining Company:

Resolved, That the Secretary of the Mining Exchange be instructed to return the communication of Mr. Alex. R. Chisolm, with the statement that after consideration of the evidence in the matter of the Memphis Mining Company the Governing Committee see no reason to change their previous action, but that the stock of the Memphis Mining Company may be re-listed without fee whenever satisfactory evidence of value and good management are laid before the Committee on Securities.

REVIEW OF THE SAN FRANCISCO MARKET.

A glance at the record of the quotations for the week just closing, compared with those recently prevailing, shows an era in mining stock speculations which should carry its lesson for years to come. That this enormous decline was deliberately premeditated is generally believed. It is certain that the impulse given the market by the "new Sierra Nevada bonanza" carried the list too high, but who can tell whether the reaction has carried the prices too low?

Favorable reports from all of the mines have been daily received here during the week, and none more so than from the new bonanza itself. The following, which we extract from the Gold Hill *News* of the 20th inst., gives additional force to our remarks, and would seem to show that the trouble originated and exists among the stock-gamblers in San Francisco:

"This break has, as a matter of course, carried with it, to a greater or less extent, the stock of every mine on the Comstock, depreciating the whole to the extent of tens of millions of dollars. To attempt at this time to give a cause for this fearful panic in which thousands of both the rich and poor of the coast have seen their all swept to utter destruction without the power to aid or help themselves, would be utterly futile. In the mine the best experts and mining judges of the Comstock have critically and carefully searched in vain for some sign of doubt or failure. All agree, without a dissenting voice in the ore prospects, so far as developed on the 2200 and 2100-foot levels, being all that could be expected, and as fine a prospect as was ever opened on the Comstock.

"Equally vain would it be for us to attempt a description of the deep-seated agony depicted in the pale, woe-stricken faces of the crowds of men and women who have gathered around the bulletins from day to day, and watched the hard earnings of years of savings and toil go like the drifting sands beneath their feet, or the melting snows in a torrid sun. Tongue can not describe the ruin, the havoc, the utter destruction wrought by a crash that has fallen like a thunderbolt from a clear sky, taking all who had risked any thing on a margin of even the most careful nature at such a disadvantage that there was no such thing as safety or time to prepare to meet it."

The origin of these troubles may have commenced among the leading stock interests, in the desire to obtain control. The following dispatch, dated San Francisco, November 25th, would seem to indicate that conflicting interests existed, but to whom now belongs the power does not appear:

"A compromise was to-day effected between J. C. Flood, representing the Union Consolidated, and John Skae, representing the Sierra Nevada, by which the Sierra Nevada deeds to the Union Consolidated its interest in thirty-five feet of ground lying within the Union lines, and also forty-eight feet of disputed ground lying next to the north line of the Union. The remainder of the 298 feet of disputed ground becomes the undisputed property of the Sierra Nevada. This brings the incline of the Sierra Nevada, in which ore was lately discovered, within twenty feet, or, as some accounts say, within twelve feet of the southerly line of the mine. The trustees of both mines met to-day and ratified the terms of compromise. Some accounts are to the effect that Flood & Co. have in the settlement obtained control of the Sierra Nevada; others that Mr. Skae retains control."

SAN FRANCISCO MINING STOCK QUOTATIONS.

Daily Range of Prices for the Week.

Name of Company	Closing Quotations						Opening.
	Nov. 22.	Nov. 23.	Nov. 25.	Nov. 26.	Nov. 27.	Nov. 28.	Nov. 29.
Alpha	11¾	10¼	10	10¼	9⅝	10	.....
Alta	8⅜	7¾	9	7⅞	7½	7½	.....
Argenta	.....	3¾	.....	.....	3½	.....	.....
Bechtel	.....	.....	.....	.....	.....	.....	.....
Belcher	6	5¼	4⅞	4⅝	4½	5	.....
Belle Isle	.....	.....	.....	.....	.....	.....	.....
Benton	.....	.....	.....	3	3½	.....	.....
Best & Bel.	18¼	16¾	17½	15⅞	16½	15½	.....
BlackHawk	.....	.....	.....	.....	.....	.....	.....
Bodie	16½	16¾	16¾	16½	16	.....	.....
Booker	.....	.....	.....	.....	.....	.....	.....
Bullion	7¼	7¾	7	6	6½	6½	.....
Bulwer	.....	.....	.....	.....	16	.....	.....
Caledonia	3⅜	3⅜	2⅞	2¾	3⅝	2¾	.....
California	9⅛	9	8¾	8½	9	9-10	.....
Chollar-Pot	41	41	40	38	38	36	.....
Confidence	8	8	.....	8	5½	.....	.....
Con. Imp	.....	.....	.....	.....	.....	.....	.....
Con. Va	8	7⅝	7½	7½	7¼	7½	.....
Crown P'int	6	5¼	5¼	5⅝	5¼	5⅝	.....
Endowm'nt	.....	.....	.....	.....	.....	.....	.....
Eureka Con	34¼	34	34	35	35	.....	.....
Exchequer	5¼	5	4½	4⅛	.....	4¼	.....
Goodshaw	.....	.....	.....	.....	.....	.....	.....
Gould & Cur	10¼	9¼	9⅜	8⅛	8	8¼-10	.....
Grand Prize	10¼	9⅞	10½	11	10⅞	.....	.....
Hale & Nor.	12¼	13	14⅝	13	12¾	12⅛	.....
Hamburg	.....	.....	.....	.....	.....	.....	.....
Homestake	.....	.....	.....	20	.....	.....	.....
Hussey	.....	.....	.....	.....	.....	.....	.....
Indep'd'nce	.....	.....	.....	.....	.....	.....	.....
Jackson	.....	.....	.....	.....	.....	.....	.....
Julia Con	3¼	3	2¾	3	3	3	.....
Justice	5⅞	5⅜	5½	5	5½	4	.....
Kentuck	5	5	.....	5	4½	4½	.....
Kossuth	.....	.....	.....	.....	.....	.....	.....
Leopard	.....	.....	.....	.....	.....	.....	.....
Leviathan	.....	.....	.....	.....	.....	.....	.....
Manhattan	.....	.....	.....	.....	.....	.....	.....
McClinton	.....	.....	.....	.....	.....	.....	.....
MeadowVal	.....	.....	.....	.....	.....	.....	.....
Mexican	36¼	33¾	35¼	30½	31	30	.....
Mono	.....	.....	6¼	6	5	.....	.....
Navajo	.....	.....	.....	.....	¾	.....	.....
North. Belle	10¼	10½	9½	9¾	10	.....	.....
Ophir	38¼	37	37¾	36¼	40½	40	.....
Orig. K'ys'e	.....	.....	.....	.....	.....	.....	.....
Overman	13½	13½	13	12½	13	12	.....
P. Sheridan	.....	.....	.....	.....	.....	.....	.....
Ray. & Ely	7	7½	9	9¼	9¼	.....	.....
Richer	.....	.....	.....	.....	.....	.....	.....
Savage	12¼	11⅜	11½	10⅛	10½	10¾	.....
Scorpion	.....	.....	.....	.....	2	.....	.....
Seg. Belcher	.....	.....	.....	.....	.....	20	.....
Sierra Nev.	54¾	52	48½	39	45	*	.....
Silver Hill	2	.....	.....	.....	1⅝	1¾	.....
Silver King	.....	.....	.....	.....	.....	.....	.....
Summit	.....	.....	.....	1¾	.....	.....	.....
Tioga	.....	.....	1½	1½	.....	.....	.....
Tip Top	.....	.....	.....	.....	.....	.....	.....
Union Con.	56½	52	56	46	58	56-7½	.....
Utah	.....	.....	.....	.....	.....	18	.....
Ward	.....	.....	¾	.....	.....	.....	.....
WashoeCon	.....	.....	.....	.....	.....	.....	.....
Wells Fargo	.....	.....	.....	1¼	.....	.....	.....
Yel. Jacket.	16½	16¼	16	14¾	15	14¼	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....

*45@43½.

Alpha opens to-day at barely maintained quotations. The Alpha-Imperial joint winze is progressing satisfactorily, and every thing about the mine working smoothly. Alta is a little lower, yet the ore prospects in this mine, it is said, were never more promising than they are at present. Argenta is fairly maintained. In cross-cutting through the ledge the lode is found 18 feet in width, the ore being at the present point of low grade. The new hoisting works in this mine are about completed. Benton Cons. is improving. On the 1250 level of this mine a fine body of quartz has been developed.

Best and Belcher is lower. Nothing unusual has transpired. Bulwer is improving, the quotation of the 17th inst. showing quite an advance. This company is about ready to begin the extracting and milling of ore, from which dividends are anticipated.

Belcher is a shade lower, but opens at some advance on the majority of quotations during the week. Two prospecting drifts, one on the 900 and the other on the 1500 level of this mine, are being run to prove unexplored ground, which, it is supposed, contains some ore. The Belmont mine (Nevada), which is not quoted in our list, is now crushing about 20 tons of ore per day and making regular shipments of bullion. The stock of this company is selling in San Francisco at from 50c. to $1 per share.

Bullion is lower. Sinking the main incline of this mine below the 2050 level is making good progress, the bottom still in a fine character of quartz and vein matter. The air-pipes have been laid through the Alpha ground, the drift repaired and work in the face commenced. This drift will be driven directly ahead through the Exchequer and Bullion ground.

Bodie stock is fairly maintained. The new shaft of this mine is down 228 feet, and everything in and about the same looking well. The mill is running steadily, and regular shipments of bullion are being made, the amount during the fiscal month of October being $123,645.06.

Crown Point is a little lower. There is no change of value to note in any of the prospecting drifts on the 2300 level of this mine. Work progressing well in all parts.

Chollar-Potosi is decidedly lower. Our principal information from this mine refers to repairs of pump-rods. This would seem to indicate activity of the pumps at least.

Caledonia opens lower to-day. This mine is troubled with bad air, the face in the east cross-cut on the 1600 level being in hard shelly rock, the seams of which are highly charged with bad air. The excavations for blowers and air-receivers have been completed.

The old bonanzas are fairly sustained. Both of the mines are making regular bullion shipments, and no prominent change is noted in the appearance of either.

Sinking the C. & C. shaft is going vigorously ahead, the bottom in hard blasting ground, and the flow of water strong. The main south drift on the 1950 level is making good progress, the face in vein matter of a fine, favorable character.

Exchequer is lower. Eureka Consolidated shows a slight improvement. There is no change in the appearance of this mine, and the regular amount of bullion is being sent forward, and one showing some improvement, the weekly product now being about 1650 tons, which gives over 376 tons of bullion.

Grand Prize stock shows some improvement. The ledge on the west winze below the 400-foot level of this mine is down 28 feet, and is four feet thick, and the ore rich all the way down.

Gould and Curry opens to-day at $8¼@$10, which prices represent the extremes of prices for the week, but a considerable decline on those prevailing during the week previous.

Hale and Norcross stock is lower. This mine is experiencing considerable difficulty with water. It is anticipated, however, that when the large drift, now being made to connect with the Requa shaft, shall have been completed, which will be within ten weeks, this difficulty will have been done away with.

At the Requa shaft the water will be pumped 400 feet, which will bring it up to the drift leading into the Sutro Tunnel. When this plan of working goes into operation, the long-drowned lower levels of the Savage and Hale and Norcross mines will be drained.

Hamburg has recently sold in San Francisco at $1.50 per share. The furnace at this mine is running very smoothly and has thus far produced 70 tons of bullion.

We have no quotation of Independence. The stock is selling very freely in San Francisco, at from $1.75 to $1.95 per share. The company is now sending 45 tons of ore per day to the Grand Prize mill. The company proposes sinking a double-compartment shaft about 500 feet north of the present working shaft, to cut the vein at the depth of 400 feet.

Justice is well maintained. The mill is running on ore from the Papoose mine and is crushed at the rate of 600 tons per month. The prospecting drifts and winzes are all making good headway without any changes of value to note.

Kentuck is steady, at lower figures. A considerable quantity of ore, which will mill from $20 to $25 per ton, is being taken out of the drifts and workings of the old upper levels of this mine. A good streak or two of ore has been encountered on the 800 level, and an upraise started to prove their value.

Leviathan is fairly active in the San Francisco market, at from 50c. to 75c. per share. The north drift on the 750 level of this mine is passing through occasional feeders of low-grade ore.

Mexican is decidedly lower. Sinking the joint Union Consolidated winze on the 1600 level of this

mine is making steady progress, the bottom in hard blasting ground. It is now down 76 feet on the slope.

Ophir shows considerable improvement. The north drift on the 2000 level of the mine is in favorable vein formation. It is now in 327 feet.

The flow of water from the Union Consolidated has nearly ceased. The stock of the Martin White Co., which does not appear upon our list, is selling on the San Francisco Board at from $8 to $8.75. The new 20-stamp mill of this company has commenced crushing ore. The company has a very large amount of ore at the mill, and it is expected that a long and prosperous run will be made. The company's principal mine, the Paymaster, is said to be looking splendidly, and has a face of 78 feet of high-grade ore exposed.

The Navajo Company is crushing about 12 tons of ore per day, the pulp assays averaging $110 per ton. The quotation of the 27th inst., of 75c., shows a slight advance. The mine is said to be looking well in all parts.

Northern Belle is fairly sustained. The company continues its regular shipments.

In the stock of the North Bonanza Mining Company we have no quotations. It is very active, however, on the San Francisco market, advancing and selling at from $2.40 to $4.95. We have reports of a steady and valuable improvement in the southeast cross-cut of this mine, the ore in this drift being free milling, and assaying very high. This company, in conjunction with the Flowery Mining Company, has advertised for proposals for sinking of a joint incline to a depth of 200 feet.

Overman is rather lower. The north drift on the 1600 level of the mine is steadily advancing; the face in hard blasting quartz.

The south drift on the 2400 level of the Yellow Jacket mine is being pushed ahead, and is now in 412 feet; face in ledge porphyry with streaks of quartz. The new shaft is down 1953 feet, and the timbering is of the most substantial character throughout. This stock opens to-day at quite a decline.

Raymond & Ely shows a gradual appreciation during the business of the week. This mine looks unusually well, and the company is making regular shipments of bullion.

Savage is lower, with no change in the water, which stands about 60 feet on the incline above the 2100 level, which condition of affairs will not now be probably much changed before the drift on the 2000 level of this mine is connected with the Combination shaft, and the water thus finds an outlet through the Sutro Tunnel.

The stock of the Scorpion Mining Company is selling in San Francisco at from $2 to $4 per share. The indications in this mine are of a very favorable character.

Sierra Nevada to-day shows an improvement on the lowest price of the week, which was $39 on the 26th inst. It is stated that there are 220 feet of ore on the slope on the 2100 level of this mine. A dispatch to the *Graphic* from Virginia City to-day says:

"The face of the cross-cut in Sierra Nevada is looking better. The ore is improving in quality as it is being further developed. The assays this evening average $180 per ton. There is no use in denying that a good body of pay-ore has been discovered. They will begin milling about the 1st of December. There is a prospect that the Independence will suspend its dividends next month, but resume them next spring.

"LATER.—The Horse in Sierra Nevada was cut through this morning. From indications, there is a fine body of ore coming in. Assays yield already from $85 to $105 per ton. Stocks are in demand, and prices advancing. The feeling here is good respecting Sierra Nevada."

The *Commercial Herald* of the 21st inst. says of the market:

"The disposition to realize on mining stocks the past week acquired an accelerated step under the rapid fall of the leading shares. The fluctuations were so violent that a perfect craze took possession of dealers, under which no one seemed to understand the market. While sales were very heavy—nearly twice the amount of the previous week—we hear of no failures, from which fact we are inclined to believe that it was a put up job, and that the greater portion of the transactions were 'wash' sales. Apparently the more favorable the reports from the lower levels of the Sierra Nevada, the greater the depression of the stock, thus revealing the anomalous condition of the market. This stock has, of course, been the leading feature of the market, producing an almost unprecedented excitement in the stock arena. It opened for the week at $185, rose to $197, and fell at the close to $60, and all this under the most favorable reports from the mine. It is a condition of affairs which 'no fellah can find out,' and we are inclined to the belief that a considerable amount of humbugging is going on. We notice that very large amounts of California and Consolidated Virginia are now changing hands, the latter particularly. Information from outside districts is quite encouraging. energy and perseverance being the watchwords in a more hopeful spirit than for many years past. We believe that next spring a very vigorous revival of legitimate mining will be inaugurated, with large developments in many new directions, and that good results will follow."

The Eureka Consolidated Mining Co. has declared a dividend of $3 per shares.

The Excelsior Water and Mining Co. has declared its thirteenth dividend of 25c. per share.

The Toquerville Mining Co. has declared a dividend of 5c.

ASSESSMENTS, with dates when delinquent: Caledonia, 50c., December 16th: New York, 30c., December 14th; Modoc, 50c., December 23d; Dardanelles, $1, December 13th; Tuscarora, 5c., December 19th: Father De Smet, $1. December 19th; Gould & Curry, $1.50, December 23d; Daney, 20c., December —; Electric, 5c., December —; South Utah, 5c., December 21st; Oriental, 50c., December 23d; Lodi. 25c.

FINANCIAL.

PROPOSALS.—OFFICE OF THE SILVER ISLET CONSOLIDATED MINING AND LANDS CO., 52 Broadway, New York, November 21, 1878. Proposals in writing are invited and will be received until three o'clock P.M. of Thursday, the fifth day of December next, for the sale, for cancellation, of fifty thousand dollars of the bonds of this company, or portions thereof, naming numbers of the bonds offered. No proposals at a price exceeding par can be accepted under the trust authority to purchase. Interest accruing to December 5th only will be allowed. Proposals to be addressed to C. P. Dixon, Trustee, at the office of the company.
EDWARD LEARNED, President.

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